# PAMS Technical Documentation
# NSW-4 Series Transceivers

# Service Software Instructions

Issue 1 08/00
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# AMENDMENT RECORD SHEET

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# Service Software

## General

To run the After Sales SW, a parallel port software protection device (PKD–1) has to be connected. TDF–4 box must connected to PC for flashing purposes. The user can use PC–locals functions in modules for testing NSW-6 mobile stations (MS). The test functions send test messages from PC to MS and receive results and show them in the PC display. The messages can be sent via M2BUS or FBUS.

Note: if this software is to be run on laptops, the power saving feature MUST be switched off.

### Hardware requirements for Windows 3.1x

The recommended minimum hardware standard to run Service Software is any computer which is 386 33 MHz or greater with at least 4 MB of memory and VGA type display (640 x 480). This assumes that only the WinTesla with After Sales Support Modules is active, i.e. other Windows packages are not running in the background.

### Hardware requirements for Windows 95

The recommended minimum hardware standard to run Service Software is any computer which has Pentium processor, memory 8 MB and meets HW requirements recommended by Microsoft.

## Software Environment of the Support Modules

The Service Software user interface is intended for the following environments: Microsoft Windows 3.1x (enhanced mode) and Windows 95environment running in enhanced mode. Support for Microsoft NT may be added, if required. Detailed information about Windows and application usage can be found from the Microsoft Windows Version 3.1 Users Guide chapter one (Windows Basics) and chapter two (Application Basics).

As an ordinary Windows application, the main idea in the user interface is that selections are made with menus, push buttons and shortcut keys. Selections can be done by using keyboard and/or mouse. There is always a status bar displayed at the bottom of the main window which contains information about current actions.


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## Required Servicing Equipment

- Computer: At least IBM 80386 or compatible with one unused serial port (COM1 or COM2) *), one parallel port (LPT1), hard disk recommended
- Operating System: DOS Version 3.2 or later
- If PCLStart in use: DOS 6.22 and IBM 80486 or compatible
- Display: Any 80–character text display
- Service software version for 3.5” disk (product code: 0774099)
- Software protection key PKD–1 (product code: 0750018)
- Service MBUS Cable DAU–9S (product code: 0730108)
- Service Audio Box JBA–6 (product code: 0770184)
- External Antenna Cable XRC–2 (product code 0730180)
- Flash Adapter FLA–12 (product code: 0770211)

*) Note: A number of PC’s of an older generation use the Intel, National Semiconductor, or United Microelectronics IC 8250 as the serial port UART. This is a comparatively inefficient circuit for current purposes and does not necessarily support the M2BUS adapter at 9600 baud. The newer UART’s NS16450 and NS16550AF of National Semiconductor offer solutions for these problems.

## Installation

### Mechanical Connections

*Caution: Make sure that you have switched off the PC and the printer before making connections.*

*Caution: Do not connect the PKD–1 key to the serial port. You may damage your PKD–1 !*

The software controls the phone via a separate adapter connected to the serial port of the PC, and to the telephone’s M2BUS (DAU–9S).

Attach the dongle PKD–1 to the parallel port 1 (25–pin female D–connector) of the PC. When connecting PKD–1 to the parallel port, be sure that you insert the computer side of the PKD–1 to the PC (male side). If you use a printer on parallel port 1, install the PKD–1 between the PC and your printer cable.

The PKD–1 should not affect devices working with it. If some errors occur (errors in printing are possible) please try printing without the PKD–1. If printing is OK without the PKD–1 please contact your dealer. We will offer you a new PKD–1 in exchange for your old one.


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## Installing the Software on PC Hard Disk

The program is delivered on a diskette and is copy protected with a dongle PKD–1. It must be present in parallel port when using Service software.

The program can also be installed on the hard disk, which is recommended to obtain a maximal data access rate.

Keep the original diskette safe to enable upgrading of the program !

If you plan to use PCL Start service software, you must install it before installing Service software, see the PCL Start installation instructions.

To install the new Service software program, follow the steps below:

---

| | | |
|---|---|---|
| 1. | insert the new Service software diskette into drive A: of your computer | |
| 2. | start Windows, and open File Manager | |
| | log into drive a: | *type* **A:** *and press <Enter>* |
| 3. | start INSTALL.EXE and install Service software to drive C: | *type* ***C:*** *and press <Enter>* |


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# Common Properties of the User Interface

This chapter describes how the User Interface CLF must appear to the user.

The User Interface MUST be capable of being driven without the use of a mouse, as the service engineer rarely has space on the bench to use a mouse.

## Login Dialog

When the Service Software application is invoked, by clicking on the Service Software icon, the **Login** dialog box will be displayed on the screen.

**Nokia logo and application name** bitmap (–)

Displays Nokia logo and name of the application.

**Application version** static text (–)

Contains the name and version of the application.

**Copyright notice** static text (–)

Copyright is informed as: "**Nokia Mobile Phones (c) 1995–1999. All Rights Reserved**".

**Login Box** edit box (–)

The user Login ID edit box, where the user enters his faultlog user name. (See Faultlog User Guide)

**OK** button (default key)

The user name is stored in memory and the dialog box is closed. When the dialog box is closed, the application starts.


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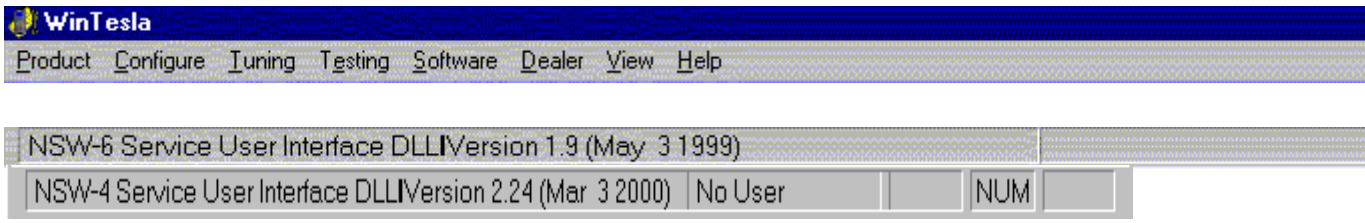
**Cancel** button (ESC)

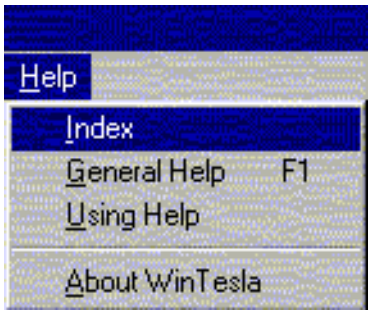
The Dialog box is closed and application is started, but the Faultlog feature is disabled.

**Help** button (F1)

Activates the Windows Help application and displays context sensitive Help.

## Main Window


WinTesla
Product Configure Tuning Testing Software Dealer View Help
NSW-6 Service User Interface DLLIVersion 1.9 (May 3 1999)
NSW-4 Service User Interface DLLIVersion 2.24 (Mar 3 2000)
No User
NUM




**Title bar**

The *title bar* is located at the top of the window.

A title bar contains the following elements:

- Application Control–menu button
- Maximise button
- Minimise button
- Name of the application
- Restore button

The properties of these elements and their usage is described in Ref 3– Microsoft Windows Version 3.1 Users Guide chapter one (Windows Basics) and chapter two (Application Basics).

**Menu bar**

The *menu bar* is below the title bar and contains all available menu selections. The menu bar is a dynamic element and is dependent on the dongle type fitted, and whether a phone is connected.

Underlined characters in menu names and options indicates that the menu selection can be done by pressing *Alt*+ *underlined character*. Options can also be selected by activating menu bar with *Alt*– key ( or *F10* key ) and using arrow–keys to highlight the desired menu. In that case, selection is done by pressing *Enter*.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Menus can also be selected by using the mouse as described in Ref 3–Microsoft Windows Version 3.1 Users Guide

**Status bar**

The *status bar* is displayed at the bottom of the Service Software main window. The status bar contains information about the menu selections and events.

The left area of the status bar describes the actions of menu items as the user uses the arrow keys to navigate through menus.

The status bar texts are explained in detailed in each of command's description.

The right areas of the status bar indicate which of the following keys are latched down:

| Indicator | Description |
|---|---|
| USER | Entered Login ID. |
| CAP | The Caps Lock key is latched down. |
| NUM | The Num Lock key is latched down. |
| SCRL | The Scroll Lock key is latched down. |

**Tool bar**

The *tool bar* is NOT defined and will not be implemented until specified by this document.


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# Menu Bar

The Service Software package will have two menu bar configurations. The first, is an abbreviated version that contains the minimum number of menus that allows package configurations when a phone is NOT connected. The second is described below:

The menu bar MUST only contain the follow menus for the Service Software package when a phone is connected:

- Product*
- Configure*
- Tuning
- Testing
- Software
- Dealer
- View
- Help*

* – always displayed, even if no phone is connected.

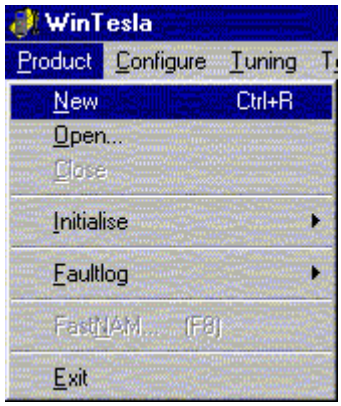
A menu is broken down into sections that are indicated with menu separators. Each sections identifies a logical difference from itself and other sections, i.e. between transmitter and receiver. Any items that are required to be added to a menu lists will be added on the bottom of the appropriate menu section list. If a new item is to be added which is common to two or more phone types, then that menu item will become a common menu item.

The menu lists will use the Microsoft [...] symbol after an item name to indicate that selecting that item will NOT initiate an operation immediately, i.e. a dialog box will be displayed for the user to select options or type in data and press the OK button before the operation is performed.

## Product

The Product menu contains the following menu items:

- New Ctrl+R
- Open...
- Close
- Initialize
  - Normal Mode F5
  - Local Mode Shift+F5
- Faultlog
  - Activate Faultlog... F9
  - Edit Faultlog...
- Fast NAM (available only if fastNAM installed)





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- Exit Alt+F4

## Configure

The Configure menu contains the following items:

- Options...
- Buses...
- Directories...
- Faultlog...
- Phone Type Specific configuration items (where applicable)
- Fast NAM (active if installed)

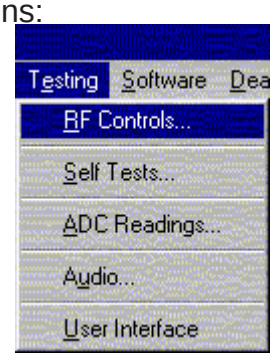
## Tuning

The Tuning menu contains the following menu sections:

- AFC..(Analog)
- VCTCXO...
- Modulator Output
- Tx Power...
- Tx I/Q...
- Rssi Digital (AGC)
- Rssi Analog
- Rx Audio
- Tx Audio
- Charging...
- LCD...

## Testing

The Testing menu contains the following sections:




- RF Controls...
- Self Tests
- ADC Readings
- Audio
- User Interface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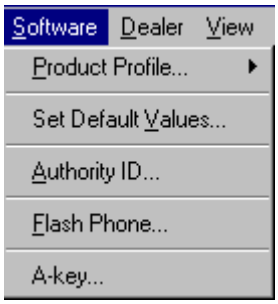
## Software

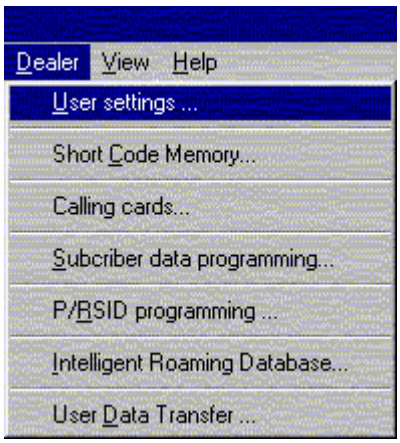
The Software menu contains the following menu sections:




- Product Profile...
- Set Default Values...
- Authority ID...
- Flash Phone...
- A key...

## Dealer

The Dealer menu contains the following menu sections:




- User Settings...
- Short Code Memory...
- Calling cards...
- Subscriber data programming..
- P/RSID programming...
- Intelligent Roaming Database...
- User Data Transfer...

## View

The View menu contains the following sections:

- Quick/RF Info...
- Phone Identity...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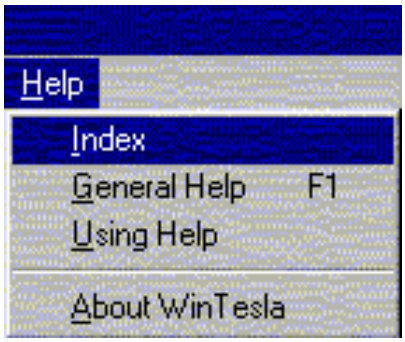
## Help

The Help menu contains the following menu items:

- Index
- General Help
- Using Help
- About WinTesla





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## Mouse Cursors

The standards Windows pointer will be used as the mouse cursor.

During time consuming tasks e.g. communication to phone, an hour glass will be shown informing the user that a task is in progress. The application uses the hour glass cursor to inform user that the application has taken the control and any actions from user will be ignored.

When a function is initiated, the hour glass will be displayed and when the function has finished the mouse pointer will return to normal.

## Reserved Keys

The following Hot keys and Short Cut keys are reserved either as Microsoft standard keys or as part of the Common Look and Feel specified by this document.

### Short Cut Function Keys

| Key | Description | Defined by |
|---|---|---|
| F1 | Context Sensitive Help | Microsoft |
| F5 | Normal Mode | NMP |
| Shift+F5 | Local Mode | NMP |
| F9 | Activate Faultlog | NMP |
| F10 | Goto Menu Bar | Microsoft |
| Ctrl+F4 | Close Active Window | Microsoft |

### Alt Hot Keys

| Key | Description | Defined by |
|---|---|---|
| Alt+F4 | Exit Active Application | Microsoft |
| Alt+H | Help | Microsoft |

### Ctrl Hot Keys

| Key | Description | Defined by |
|---|---|---|
| Ctrl+N | File – New | Microsoft |
| Ctrl+O | File – Open | Microsoft |
| Ctrl+P | File – Print | Microsoft |
| Ctrl+R | Product – New | NMP |

### Shift Hot Keys

| | | |
|---|---|---|
| Shift+F5 | Local Mode | NMP |


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## Key Strokes

| Key | Description | Defined by |
|---|---|---|
| Alt+P | Product Menu | NMP |
| Alt+P,N | New | NMP |
| Alt+P,O | Open | NMP |
| Alt+P,C | Close | NMP |
| Alt+P,I | Initialize Pop–up | NMP |
| Alt+P,I,N | Normal Mode | NMP |
| Alt+P,I,L | Local Mode | NMP |
| Alt+P,F | Faultlog Pop–up | NMP |
| Alt+P,F,A | Activate Faultlog | NMP |
| Alt+P,F,E | Edit Faultlog | NMP |
| Alt+P,N | Fast NAM | NMP |
| Alt+P,X | Exit Application | NMP |
| Alt+C | Configure | NMP |
| Alt+C,O | Option | NMP |
| Alt+C,D | Directories | NMP |
| Alt+C,F | Faultlog | NMP |
| Alt+C,N | Fast NAM | NMP |
| Alt+C,G | GPIB instruments (disabled) | NMP |
| Alt+T | Tuning Menu | NMP |
| Alt+T,A | AFC (Analog) | NMP |
| Alt+T,V | VCTCXO | NMP |
| Alt+T,M | Modulator Output | NMP |
| Alt+T,X | Tx Power | NMP |
| Alt+T,Q | Tx I/Q | NMP |
| Alt+T,D | Rssi Digital (AGC) | NMP |
| Alt+T,N | Rssi Analog | NMP |
| Alt+T,R | Rx Audio | NMP |
| Alt+T,T | Tx Audio | NMP |
| Alt+T,C | Charging | NMP |
| Alt+E | Testing Menu | NMP |
| Alt+E,R | RF Controls | NMP |
| Alt+E,S | Self Tests | NMP |


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| | | | |
|---|---|---|---|
| Alt+E,A | ADC Readings | | NMP |
| Alt+E,D | Audio | | NMP |
| Alt+E,U | User Interface | | NMP |
| Alt+S | Software Menu | | NMP |
| Alt+S,I | P | NMP | |
| Alt+S,P | Product Profile | | NMP |
| Alt+S,S | P | NMP | |
| Alt+S,V | Set Default Values | | NMP |
| Alt+S,W | Va | NMP | |
| Alt+S,A | Authority ID | | NMP |
| Alt+S,F | Flash Phone | | NMP |
| Alt+D | Dealer Menu | | NMP |
| Alt+D,D | P | NMP | |
| Alt+D,U | User Settings | | NMP |
| Alt+D,C | Short Code Memory | | NMP |
| Alt+D,V | Set UI/DEV Default Values | | NMP |
| Alt+D,E | International access code | | NMP |
| Alt+D,F | System Service Feature codes | | NMP |
| Alt+D,S | Subscriber data programming | | NMP |
| Alt+D,R | P/RSID programming | | NMP |
| Alt+D,I | Intelligent Roaming Database | | NMP |
| Alt+V | View Menu | | NMP |
| Alt+V,Q | Quick/RF Info | | NMP |
| Alt+V,P | Phone Identity | | NMP |
| Alt+H | Help Menu | | Microsoft |
| Alt+H,I | Index | | Microsoft |
| Alt+H,G | General Help | | Microsoft |
| Alt+H,U | Using Help | | Microsoft |
| Alt+H,A | About WinTesla | | NMP |


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# Help Functions

The Help User Interface will be the standard Windows help tool called WinHelp.

The context sensitive help is activated with **F1**–key. Help contains also Using Help which describes how to use help facility. Refer to the Windows manual for detailed description on the Windows Help.

# Dialog boxes

The Service Software application uses many different dialog boxes. Dialog boxes are used to display data and prompt the user for input.

Dialog boxes are opened from menus or with shortcut keys. Dialog boxes have different properties but some features are common.

All service dialog boxes must be modal, that is, the user will not be able to start another operation without first closing the present dialog box.

All dialog boxes will contain the following entities:

– Help button

– Title bar

– At least one button other than Help

– Application Control–menu Button

## Common Dialog boxes

This sections describes the common dialog boxes used in the Service Software package, and the context in which they will be used.

### Note Message Box

When the user has made an illegal selection, a *note message box* dialog will be opened and message text is displayed. The message box is also opened when the program has some information for the user. The size of the dialog box may vary. An information dialog box is recognized by the **!**–icon.

The dialog box will also contain an OK button and a Help button.

**OK** button (default key):

Acknowledge displayed information and continue. The dialog box is closed after selection.

**Help** button (Alt+H):

Opens context sensitive help as F1–key does.

### Query Message Box

Confirmations and questions are asked in *a query message box*. A query dialog box is recognized by the **?**–icon.


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The dialog box will also contain a Yes button, a No button, and a Help button.

**Yes** button (Alt+Y or Y) (default key):

Accepts confirmation or question.

**No** button (Alt+N or N):

Denies confirmation or question.

**Help** button (Alt+H):

Opens context sensitive help as F1–key does.

The buttons may also be OK and Cancel. The operation of these buttons are the same as in the Note dialog box.

### Error Message Box

Error message dialog boxes use the Stop–icon. When a “Stop”–dialog box is shown, the current operation is terminated.

The dialog box has a description about the failed operation and reason. Pressing F1 (Help) application opens the appropriate help topic that gives information about recommended actions.

The dialog box will also contain an OK button and a Help button.

**OK** button (default key):

Acknowledges displayed information and terminate current operation. The dialog box is closed after selection.

**Help** button (Alt+H):

Open context sensitive help as F1–key does.


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### Custom Dialog boxes

All custom dialog boxes will contain the predefined buttons as defined below in the section – *Buttons.* However, it is recognised that features may require additional button types, but the addition of these non–standard buttons should be carefully considered to minimise any inconsistencies between implementations.

The buttons will be positioned down the right–hand side of the dialog boxes. The default action will be **OK**, except where that default action could result in an irretrievable failure.

All tuning dialogs that contain tuning results, will display the old tuned data read from the phone before the tuning was performed, as well as the newly tuned data.

List boxes will be used to display lists of data,  such as tuning data, test results etc.

The use of Radio buttons should be limited and carefully considered. The use of radio buttons defines the number of possible choices available to the user, which may be acceptable for one project, but not for another.

## Buttons

All buttons must be the Microsoft style of buttons.

In general, the default button will be the action button, the Close button or the Yes button, but this will depend on the context of the dialog box that the button is associated with.

**(action)** button:

Accepts and validates entered settings and values and closes the dialog. If the values have not been changed, then no action will be taken. The status bar will reflect the status. The user should only be queried, if the settings or values accepted will over–write data that CAN NOT be reproduced.

A greyed **OK** button indicates that settings selected by the user are not acceptable.

**Close** button:

Closes the current dialog box. Does not send or store anything and closes the dialog. The Close button is only used for dialogs that do not set or change any data.

**Cancel** button (Esc):

Cancel operation. Does not send or store anything and closes the dialog box.

A greyed **Cancel** button indicates that it is not possible to quit from this dialog box.

**Yes** button (ALT+Y or Y):

Replies Yes to a question asked of the user.


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**No** button (ALT+N or N):

Replies No to a question asked of the user.

**Help** button (ALT+H):

Opens context sensitive help as F1–key does.

## Reporting Status

The status bar will be used to report the present status to the user. When a feature is initiated, the status bar will be updated with a brief description of the function. The status bar will also be updated at key points in a time consuming function.

If an error is to be reported to the user, it will be displayed in the status bar as well as displayed in a common error dialog box. This will mean the user is not delayed from progressing on to the next operation unless an error occurs, in which case, the user will have to acknowledge the error by pressing the OK button.


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# NSW-4 FEATURES

## Menu bar

After Sales SW's menus follows the menu structure specified in WinTesla User Interface Specification. This specification will describe functionality that differs from WinTesla specification.

## Product

### New command

| Activation | Status Bar Text |
|---|---|
| Alt, P, N<br>Ctrl+R | Rescan a new phone |

If phone is changed (with same phone type only serial number is changed) phone will be initialised to local mode. If phone is changed to different phone type the current DLLs are unloaded and new ones are loaded for that phone.

If the Quick/RF Info view is open, window will be automatically updated.

If Phone Information view is open, it will be automatically updated.

### Open... command

| Activation | Status Bar Text |
|---|---|
| Alt, P, O | Force load phone specific functionality |

Phone is set to local mode.

### Initialise... command

| Activation | Status Bar Text |
|---|---|
| Alt, P, I | |

Opens a submenu for Normal Mode and Local Mode


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**Normal Mode**

| Activation | Status Bar Text |
|---|---|
| Alt, P, N | Initialises phone to normal (cellular) mode |
| F5 | |

When normal mode has been activated or program has been started, self–test results will be asked from MCU. If any fault was found in the tests, an error message is shown. If normal mode has been set successfully (no self test error has been found), and paging listening has been started, the used AFC value is requested from MS.

Initialisation routine checks phone's cellular type and if unsupported phone is detected, application unloads the DLLs.

The After Sales SW sets automatically the MS state to normal mode when needed.

If phone identification view is open, window will be automatically updated. Also if RF Information Window is open it will be updated to quick info view.

**Local Mode**

| Activation | Status Bar Text |
|---|---|
| Alt, P, L | Initialises phone to local mode |
| Shift+F5 | |

Selection will change the MS state to *local*. When user selects item from Testing or Tuning menus, the After Sales SW software will change automatically the MS state to local.

The After Sales SW sets automatically the MS state to normal mode when needed.

Also if quick info view is open it will be updated to RF Information view.

**Faultlog command**

| Activation | Status Bar Text |
|---|---|
| Alt, P, F | |

Opens a submenu. Only enabled when user has logged in.


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**Activate Faultlog**

| Activation | Status Bar Text |
|---|---|
| Alt, P, F, A<br>F9 | Activates the faultlog. Only enabled when user has logged in. |

**Edit Faultlog**

| Activation | Status Bar Text |
|---|---|
| Alt, P, F, E | Allows user to edit faultlog entries. Only enabled when a user has logged in. |

**FastNAM command**

| Activation | Status Bar Text |
|---|---|
| Alt, P, N<br>F8 | This menu is only enabled when FastNAM functionality is included in WinTesla. |

**Exit command**

| Activation | Status Bar Text |
|---|---|
| Alt, P, X | Exits the WinTesla application. |


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## Tuning

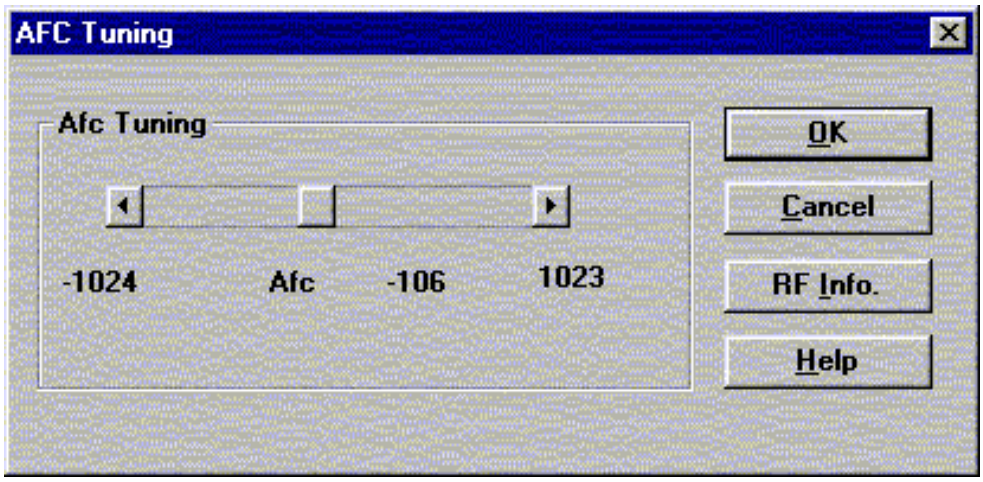
The tuning menu offers functions for ME adjustments.

### AFC... command

| Activation | Status Bar Text |
|---|---|
| Alt, T, A | Open AFC Tuning dialog box |

The next automatic selections are made when this tuning function is activated:
- Active Unit = TX
- Operation mode = Analog
- Channel  250 (low)
- Power level 4
- low band

The **AFC Tuning** dialog is opened.




AFC tuning dialog box includes the following items:

Afc scroll bar

Set calibration value to phone

RF Info  button (ALT+I):

The current rf state is shown

OK button (ALT+O):

Dialog box is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog box is closed and tuning *is not saved* to phone.

Help button (Alt+H):

Opens context sensitive help.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### VCTCXO... command

Starts Voltage Controlled Temperature compensated oscillator tuning

| Activation | Status Bar Text |
|---|---|
| Alt, T, V | Open Tuning VCTCXO dialog box |

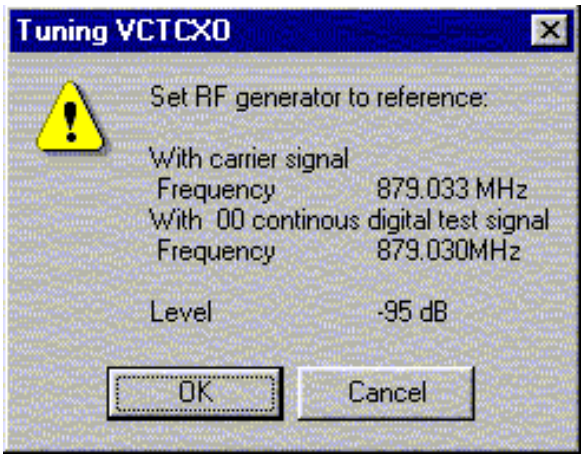
The next automatic selections are made when this tuning function is activated:

– Active Unit = RX
– Operation Mode = Continuous digital
– low band
– Channel 301
– Power level OFF

Eeprom DAC value is shown.

The measurement is started when ”meas” button is pressed and it is executed in two steps:

1. User is requested to put signal generator input level –95 dB and frequency 879.030 Mhz





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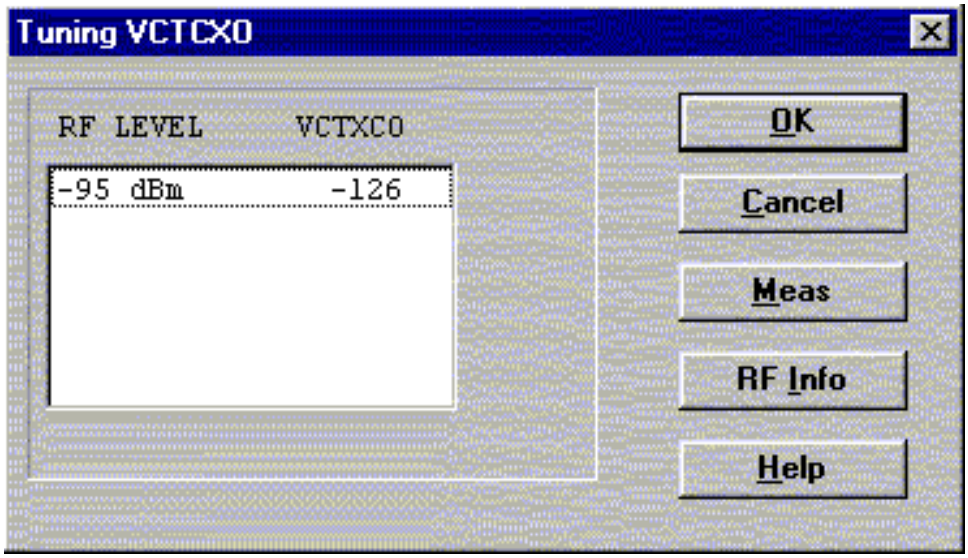
2. Measurement with input level is executed and the value is shown in the list box




**VCTCXO tuning** dialog includes the following items:

VCTCXO List box (ALT+A):

VCTCXO value is shown

Meas button (ALT+M):

The measurement can be started by pressing this button.

RF Info button (ALT+I):

The current rf state is shown

OK button (ALT+O):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

Help button (Alt+H):

Opens context sensitive help.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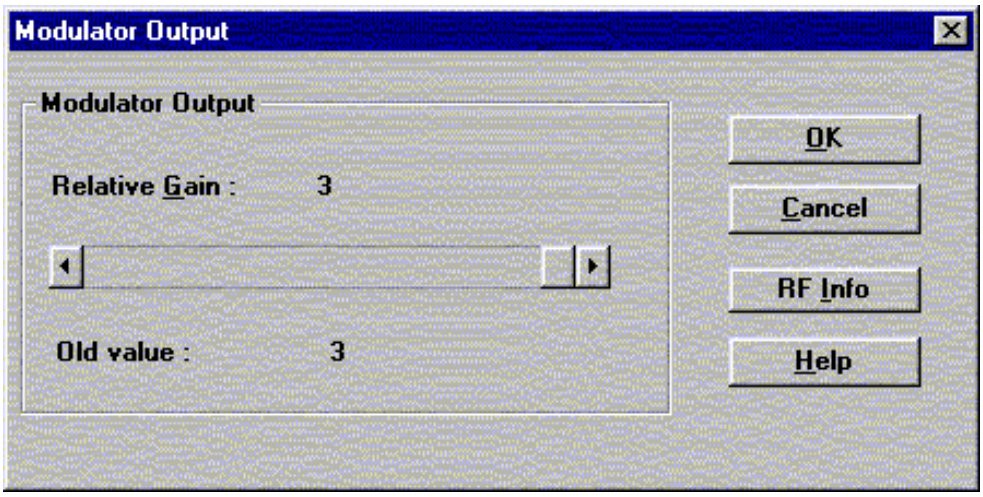
**Modulator Output... command**

| Activation | Status Bar Text |
|---|---|
| Alt, T, H or L | Open Modulator Output Tuning dialog box |

Starts modulator output tuning

The next **automatic selections** are made when this tuning function is activated:

– Active Unit = TX
– Operation mode = Continuous Digital
– Channel  730 (low) of  1400 (high)
– Power level 2
– Selected band




Modulator Output Diagram dialog box includes the following items:

Relative Gain Scroll bar

Set calibration value to phone

Old value static

Value from Eeprom

RF Info  button (ALT+I):

The current rf state is shown

OK button (ALT+O):

Dialog box is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog box is closed and tuning *is not saved* to phone.

Help button (Alt+H):

Opens context sensitive help.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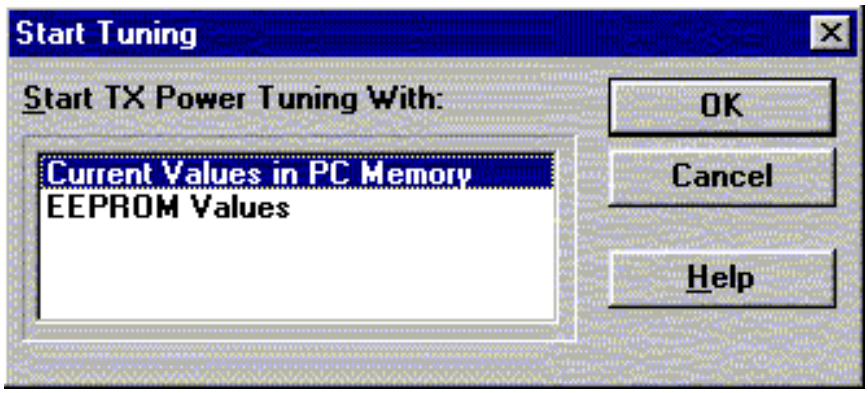
**Tx Power... command**

| Activation | Status Bar Text |
|---|---|
| Alt, T, X, H or L | Open TX Power Tuning dialog box |

Starts TX power tuning.

User is first requested to select with which values the tuning is started in **Start Tuning** dialog.




Start Tuning dialog includes the following items:

Current Values in PC memory

Tuning values are load from program's internal memory.

Phone EEPROM Values

Tuning values are load from ME's EEPROM.

The next automatic selections are made when this tuning function is activated:

– Active Unit = TX
– Operation Mode = Continuous digital
– Selected band
– Channel 190 (low ) or 500 (high)
– Power level 6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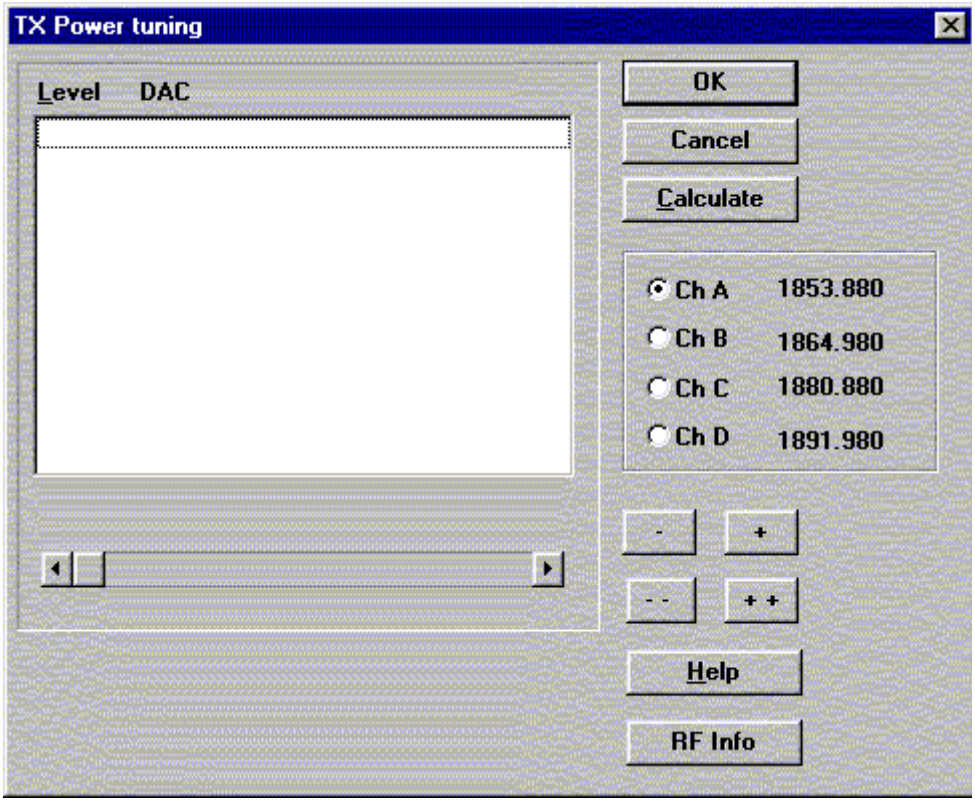
The **TX Power Tuning** dialog will be activated automatically after value selection.




**TX Power Tuning** dialog includes the following items:

Level DAC list box (ALT+L):

The power is presented in DAMPS level values (2..10) .DACs can have values from –511 to 512.The tuning position is high-lighted and can be tuned with +/– keys or left/r**ight cursor keys or scroll bar.**

Ch A radio button: Tuning channel A. Frequency is shown.

Ch B radio button: Tuning channel B. Frequency is shown.

Ch C radio button: Tuning channel C. Frequency is shown.

Ch D radio button: Tuning channel D. Frequency is shown.

+/– buttons:

+ and – buttons will cause power DAC changing by 1steps .

++/— buttons:

+ and – buttons will cause power DAC changing by 10 steps .

OK button (ENTER):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.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Calculate button (ALT+C):

Activate calculation

When selections are used, the power value checking is made and if it is not succeeded, error message is shown.

Help button (Alt+H):

Opens context sensitive help.

RF Info button (ALT+I):

The current rf state is shown


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**Tx I/Q... command**

| Activation | Status Bar Text |
|---|---|
| Alt, T,Q | Open TX I/Q Tuning dialog box |

This function is used for tuning TX I and Q branch DC offset and phase offset.

The function opens same **Start Tuning** dialog as with TX Power Tuning.

Start Tuning With list box (ALT+S):

Current in PC memory

Tuning values are load from program's internal memory.

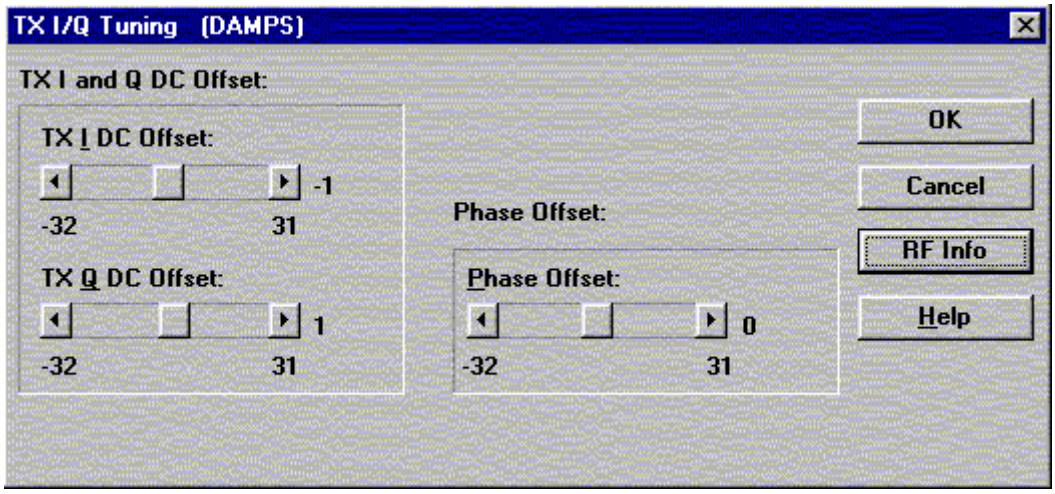
Phone EEPROM

Tuning values are load from ME's EEPROM.

The next automatic selections are made when this function is activated:

– Active Unit = TX
– Operation Mode = analog
– Low band
– Channel 190
– Power level 4

The **TX I/Q Tuning** dialog is opened.




TX I/Q Tuning includes the following items:

Tune TX I DC Offset scroll bar (ALT+I):

The DC Offset is shown as DAC value.
With this selection the I branch DC Offset is tuned.
The value range is –32...31.

Tune TX Q DC Offset scroll bar (ALT+Q):

The operation of this function is the same as one above, except with this selection the Q branch DC Offset is tuned.
The value range is –32...31.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Tune Phase Difference scroll bar (ALT+P):

The operation of this function is the same as one above, except with this selection the Phase Offset is tuned. The value range is –32...31.

OK button (ALT+O):

Dialog box is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog box is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):

The current rf state is shown

Help button (Alt+H):

Opens context sensitive help.

**RSSI Digital (AGC)... command**

| Activation | Status Bar Text |
|---|---|
| Alt, T, D, H or L | Open the Tuning AGC dialog box |

Starts Automatic Gain Control calibration. This means Received Signal Strenght indicators in digital mode.

The next automatic selections are made when this tuning function is activated:

– Active Unit = RX
– Operation Mode = Continuous digital
– Selected band
– Channel 301 (low) or 500 (high )
– Power level 2

Eeprom DAC values is shown and the measurement is started by pressing Meas button. Measurement is done in eleven steps:

1. User is requested to put signal generator input level –95 dB and frequency 879.030 MHz

2. Measurement with input level is executed

3. User is requested to put signal generator input level –85 dB and frequency 879.030 MHz

4. Measurement with input level is executed

5. User is requested to put signal generator input level –75 dB and frequency 879.030 MHz

6. Measurement with input level is executed

7. User is requested to put signal generator input level –65 dB and frequency 879.030 MHz

8. Measurement with input level is executed

9. User is requested to put signal generator input level –55 dB and frequency 879.030 MHz


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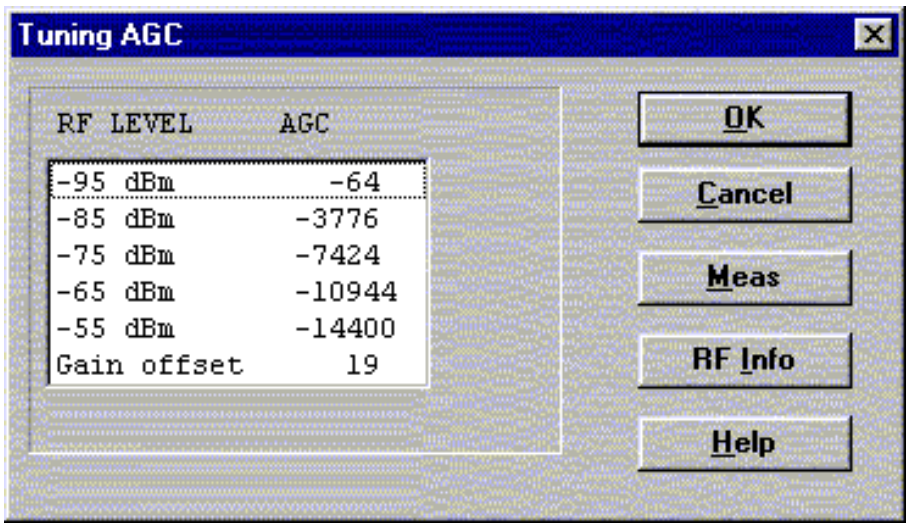
10. Measurement with input level is executed
11. The AGC tuning dialog will be updated when previous steps are done




AGC tuning dialog includes the following items:

RF level AGC List box (ALT+R):

DAC values is shown

Meas button (ALT+M):

The measurement can be started by pressing this button.

OK button (ALT+O):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):

The current rf state is shown

Help button (Alt+H):

Opens context sensitive help.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### RSSI Analog... command

| Activation | Status Bar Text |
|---|---|
| Alt, T, N | Open the Tuning RSSI dialog box |

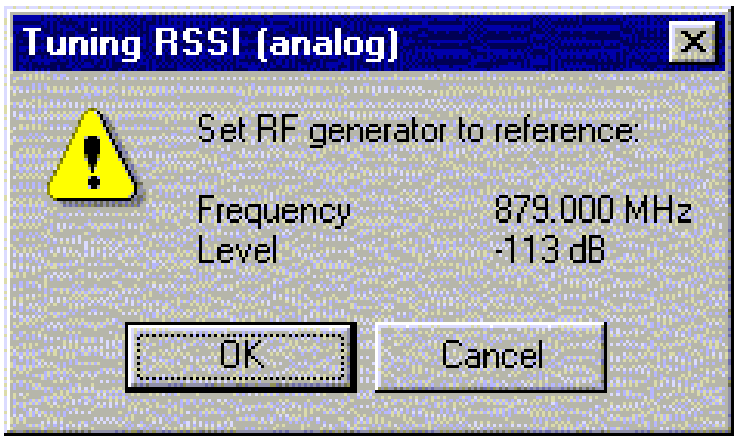
This function is used for tuning analog RSSI.

The next automatic selections are made when this tuning function is activated:

– Active Unit = RX
– Operation Mode = analog
– Power Level  OFF
– Channel 300
– Low band

Values from Eeprom is shown and the measurement is started when the ”meas” button is pressed and it is executed in five steps:

1. User is requested to put signal generator input level –113 dB  and frequency 879.300 MHz




2. Measurement with input level is executed

3. User is requested to put signal generator input level –51 dB and frequency 879.300 MHz

4. Measurement with input level is executed

5. The RSSI tuning dialog will be updated when previous steps are done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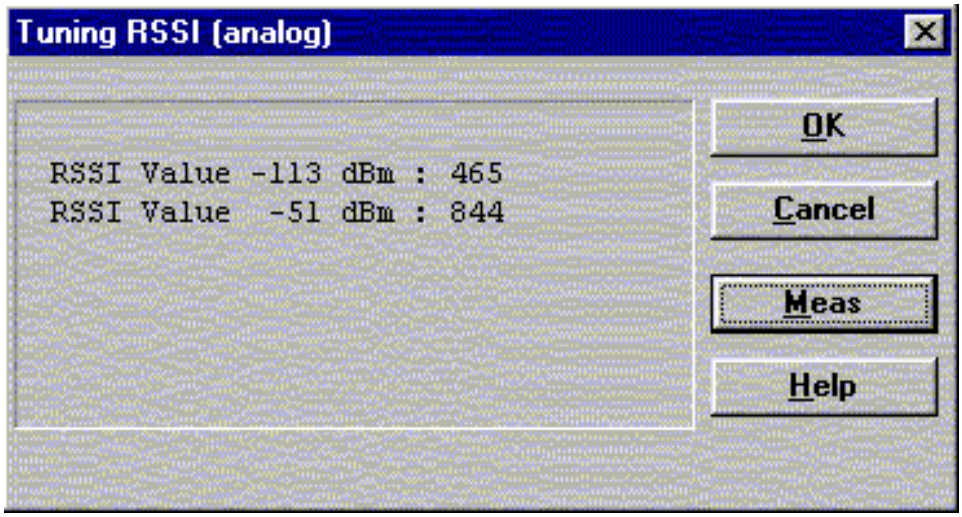
**RSSI analog tuning** dialog has following items:




RSSI value list box

DAC values is shown

Meas button (ALT+M):

The measurement can be started by pressing this button.

OK button (ENTER):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

Help button (Alt+H):

Opens context sensitive help.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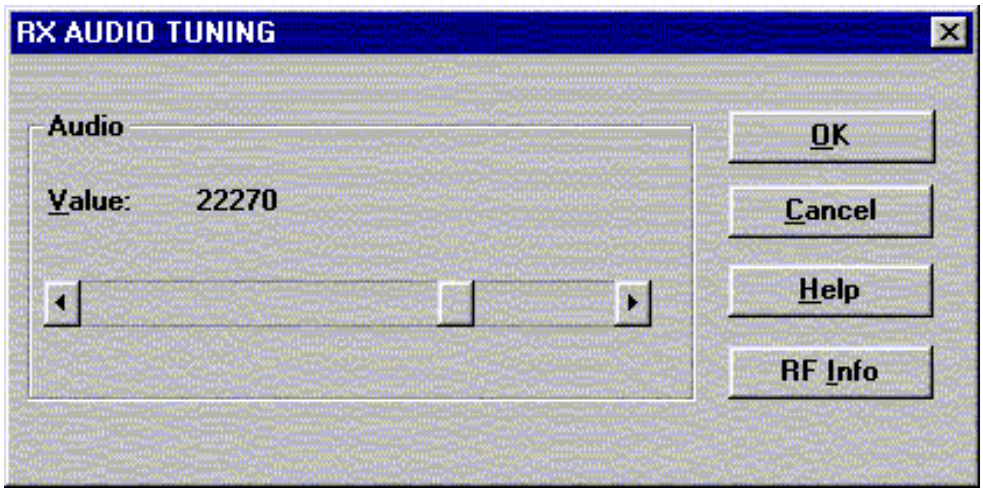
**Rx Audio... command**

| Activation | Status Bar Text |
|---|---|
| Alt, T, R | Starts Rx audio tuning |

The next automatic selections are made when this function is activated:

– Active Unit = RX
– Operation Mode = analog
– Channel 990
– Power level OFF
– low band




**RX audio tuning** dialog includes the following items:

Value scroll bar **(**ALT–V**)**

Set Calibration value to phone

OK button (ENTER):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):

The current rf state is shown

Help button (Alt+H):

Opens context sensitive help.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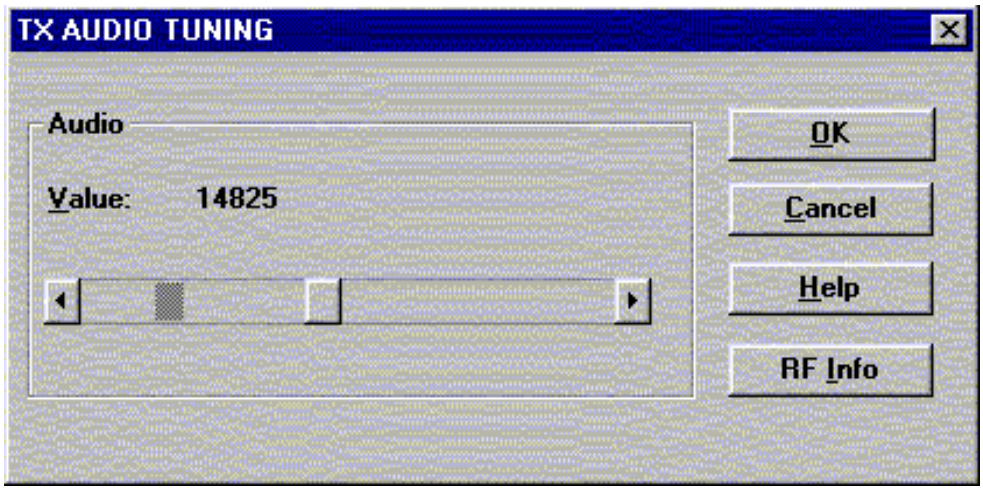
**Tx Audio... command**

| Activation | Status Bar Text |
|---|---|
| Alt, T, T | Starts Tx audio tuning |

The next automatic selections are made when this function is activated:

– Active Unit = TX
– Operation Mode = analog
– Channel 990
– Power level 3
– low band




**RX audio tuning** dialog includes the following items:

Value scroll bar **(**ALT–V**)**

Set Calibration value to phone

OK button (ENTER):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):

The current rf state is shown

Help button (Alt+H):

Opens context sensitive help.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**Charging... command**

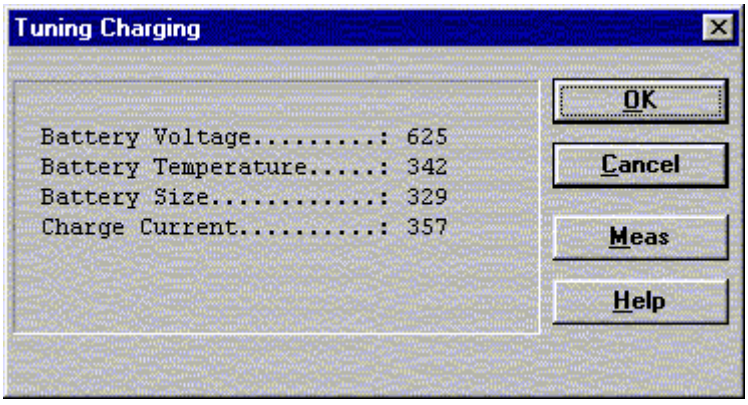
| Activation | Status Bar Text |
|---|---|
| Alt, T, C | Starts charging tuning |

The next automatic selections are made when this function is activated:

Active Unit = RX
Operation Mode = analog
Power Level = OFF
Channel 300
Low band

Before charging tuning is started, the battery setting request is shown.

Eeprom DAC values is shown and the measurement is started when the ”meas” button is pressed.




Charging tuning dialog includes the following items:

Values list box:
DAC values are shown.

Meas button (ALT+M):
The measurement can be started by pressing this button.

OK button (ENTER):
Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):
Dialog is closed and tuning *is not saved* to phone.

Help button (Alt+H):
Opens context sensitive help.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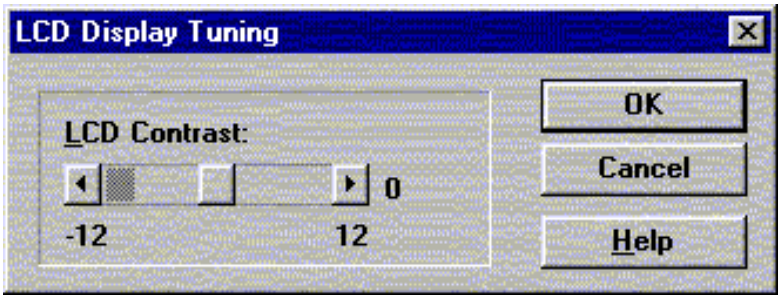
### LCD... command

| Activation | Status Bar Text |
|---|---|
| Alt, | Opens LCD Display contrast tuning box |

Command opens LCD Display Tuning dialog box which contains scrollbar to make display adjustments.




**LCD Display Tuning** dialog box includes the following items:

LCD Contrast scrollbar (ALT+L):
Enables user to tune display contrast between –12 and 12.

OK button (ENTER):
Dialog box is closed and tuning *is saved* to phone.

Cancel button (ESC):
Dialog is closed and tuning *is not saved* to phone.

Help button (Alt+H):
Opens context sensitive help.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## Testing

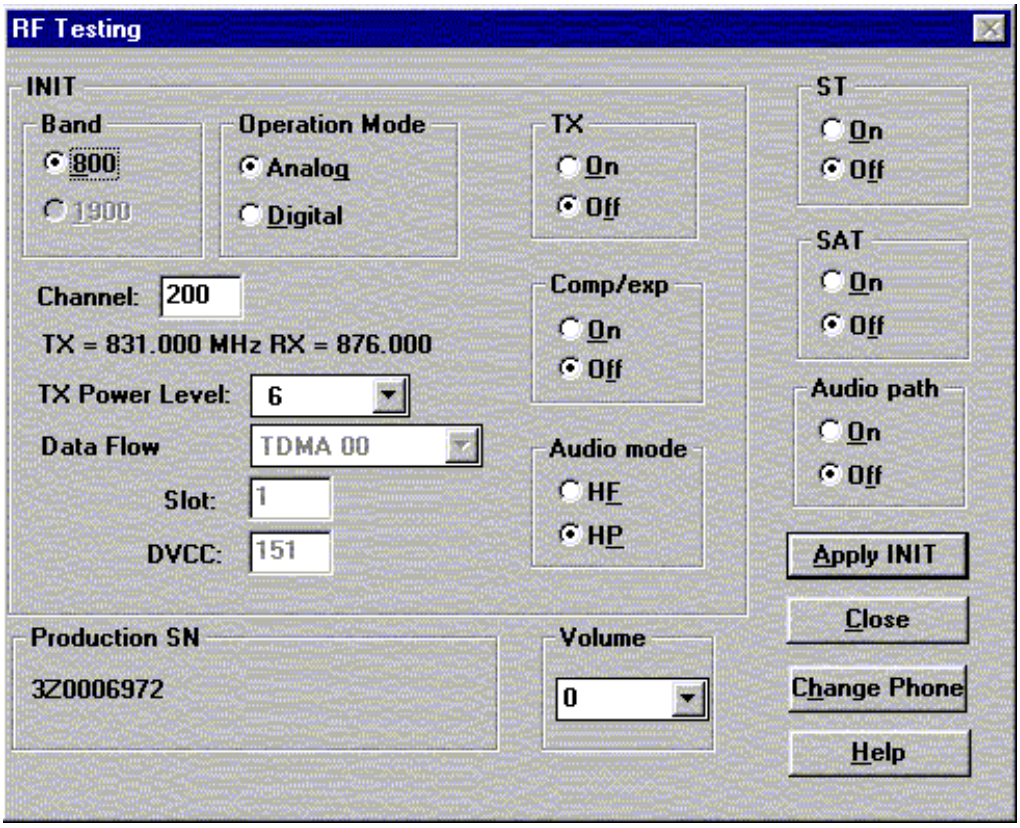
The Testing sub menu offers functions for ME testing.

### RF Controls... command

| Activation | Status Bar Text |
|---|---|
| Alt, E,R | Open RF Controls dialog box |

This function is used for quick RF testing.

Command opens **RF Controls** dialog, which contains data for testing and adjustments.




RF Controls dialog includes the following items:

Band group:

- 800 radio button
  - Select low band
- 1900 radio button
  - Select high band

Operation mode group

- Analog radio button — Select analog mode
- Digital radio button — Select digital mode

TX group

- On radio button — Activate tx power
- Off radio button — Deactivate tx power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Comp/exp group

On radio button — Set compander on
Off radio button — Set expander on

Audio mode group

HF radio button — Set audio handsfree mode
HP radio button — Set audio hand portable mode

ST group

On radio button
Set signalling tone on in analog mode only
Off radio button
Set signalling tone off in analog mode only

SAT group

On radio button
Set Supervisory Audio Tone on in analog mode only
Off radio button
Set Supervisory Audio Tone off in analog mode only

Audio path group

On radio button — Set external audio path on
Off radio button — Set external audio path off

Data Flow Type drop list (gray text = feature not active)

This list changes the transmission data type. List consists following transmissions:
* TDMA mode zero data transmission
* TDMA mode random
* Continuous digital 11

TX Power Level drop list

With this value is possible to change the transmission power. The user can give the needed D–AMPS power value (2..10).

Channel edit box

User can enter here channel number that is used for both transmission and receiving. The frequency of the selected channel is shown after selection.

Slot edit box (gray text = feature not active)

Value of used time slot in digital mode only

DVCC edit box (gray text = feature not active)

Value of Digital verification color code in digital mode only

Volume drop list

Value of audio volume can be selected

Apply init button (ALT+A):

Accepts INIT group values and validates them. After validation application sends corresponding messages to ME.

Close button (ESC)

Close dialog


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Change phone button (ALT+H)

Read production serial number

Production SN static

Show production serial number

Help button (Alt+H):

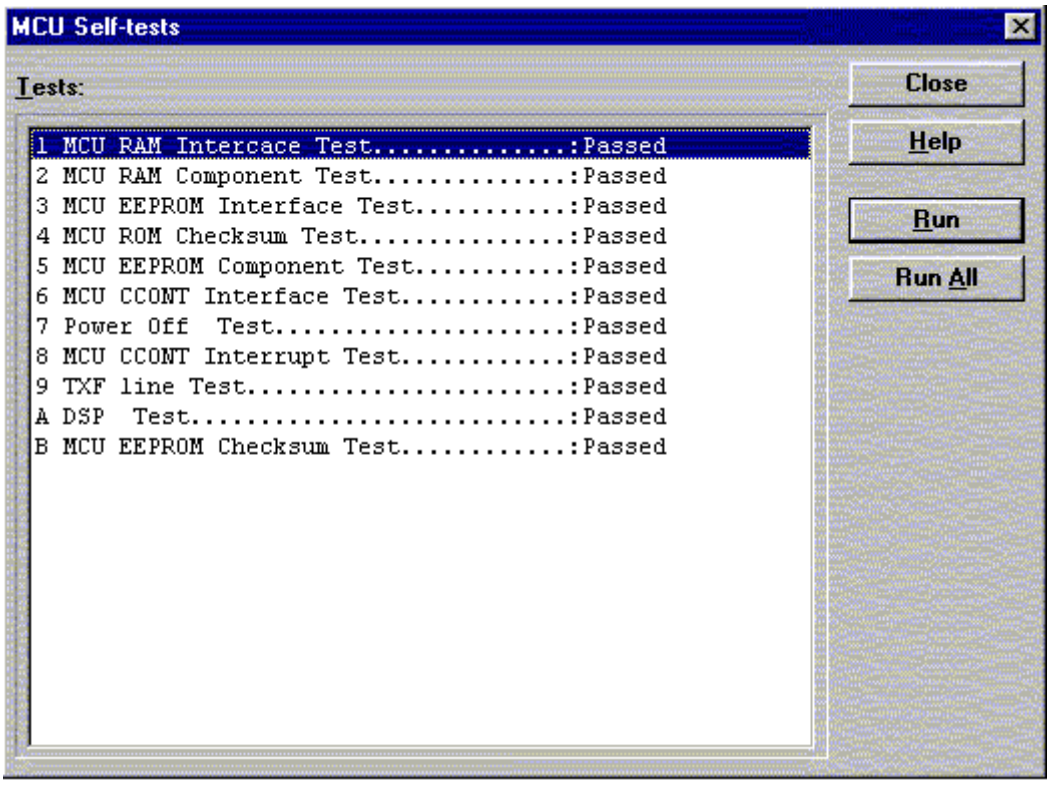
Opens context sensitive help.

**Self Tests... command**

| Activation | Status Bar Text |
|---|---|
| Alt, E,S | Open MCU Self–tests dialog box |

Command is used for reading self test results and running self tests.

When the selection is made, the test result is read from ME. The test result will be shown to the user within **MCU Self–test** dialog.




MCU Self–test dialog box includes following items:

**Tests** list box (ALT+T):

Test states are updated according to results received from the phone. Possible test states will be one of the next:
Passed
Failed
No response
Not executed
RUNNING....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Run button (ALT+R):

User can select desired test from list and hit **Run** button. When user selects test to be run the text *RUNNING...* is shown in test state field. When results are received the test state field is updated according to the result.

If no response was received in the defined time, an *error message box* will be shown and the test state is changed to *No response*.

Run All button (ALT+A):

User can run all listed tests. The text *RUNNING...* is shown in test state field and test is run. When results are received the test state field is updated according to the results. When state field is updated application moves to next test and repeats previous cycle.

Only last test is not executed (Power off Test) because it will turn phone power off.

Close (ENTER) button:

Dialog box is closed.

Help button ( Alt+H)

Context sensitive help

**Supported Self Tests**

The following tests are available:

1 MCU RAM Interface.....

2 MCU RAM Component.....

3 MCU EEPROM Interface.....

4 MCU ROM Checksum.....

5 MCU EEPROM Component.....

6 MCU CCONT Interface.....

7 Power Off.....

8 MCU CCONT Interrupt.....

9 TXF line.....

A DSP.....

B MCU EEPROM Checksum.....


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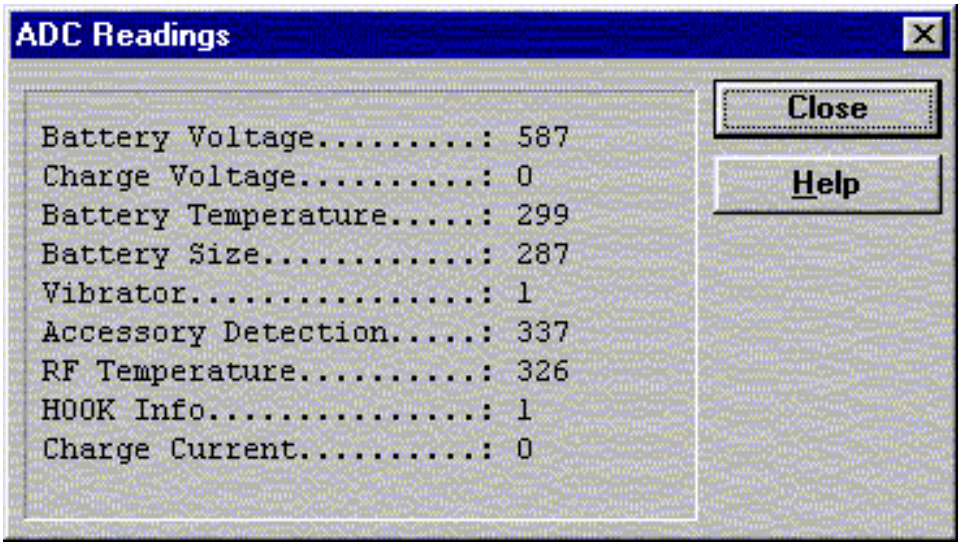
### ADC Readings... command

| Activation | Status Bar Text |
|---|---|
| Alt, E, A | Open ADC Readings dialog box. |

Command is used to read and show A/D values from phone.

Command opens **ADC Readings** dialog.




ADC Readings dialog has static text field where measurements are updated to every second.

ADC Readings dialog has following items:

Close (ENTER) button:

Dialog box is closed and tuning *is not saved* to phone.

Help button ( Alt+H)

Context sensitive help

Following A/D readings are measured:

Battery Voltage.....:
Charge Voltage.....:
Battery Temperature.....:
Battery Size.....:
Vibrator.....:
Acessory Detection.....:
RF Temperature.....:
HOOK Info.....:
Charge Current.....: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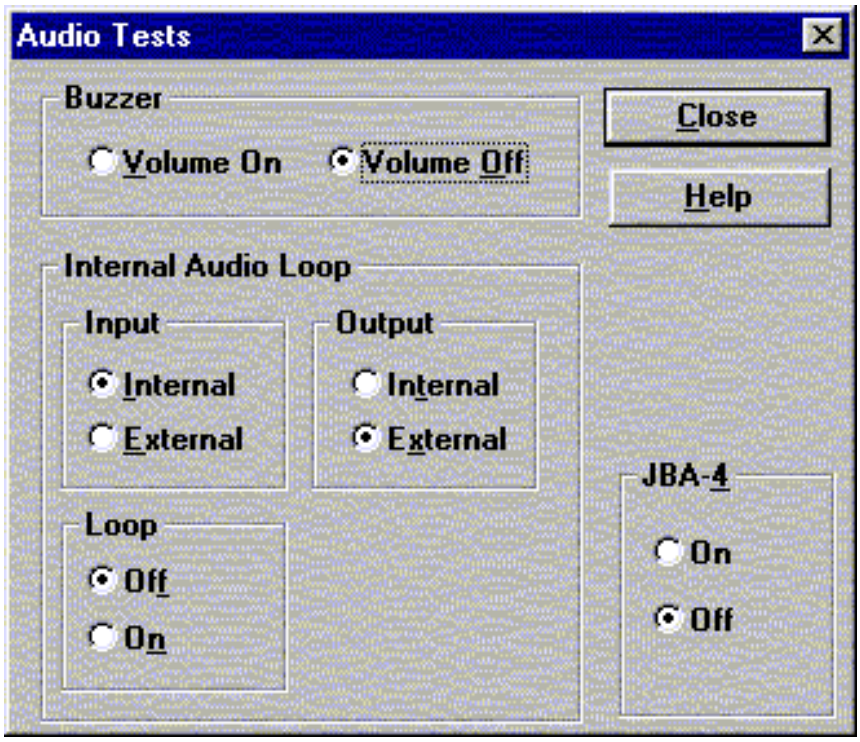
**Audio... command**

| Activation | Status Bar Text |
|---|---|
| Alt, E,U | Open Audio Tests dialog box |

Command is used for making **Audio Tests**.




Audio Tests dialog includes the following items:

Buzzer Volume group:

Volume On radio button (ALT+V):

Turns buzzer on.

Volume Off radio button (ALT+O):

Turns buzzer off.

Internal Audio Loop group:

Input group:

Internal radio button (ALT+I):

Turns on internal input.

External radio button (ALT+E):

Turns on external input.

Output group:

Internal radio button (ALT+T):

Turns on internal output.

External radio button (ALT+X):

Turns on external output.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Loop group:

Off radio button (ALT+F):

Turns audio loop off.

On radio button (ALT+N):

Turns audio loop on.

JBA–6 group (Alt+4):

On radio button

Activate audio box
Deactivate loop controlling

Off radio button

Activate loop controlling

Microphone test:

Connect a headset in the phone
Select Testing –> Audio
Loop: Internal –> External
Loop ON

Now everything spoken in the mic is heard in the headset.

Close button (ESC)

Close dialog

Help button ( Alt+H)

Context sensitive help


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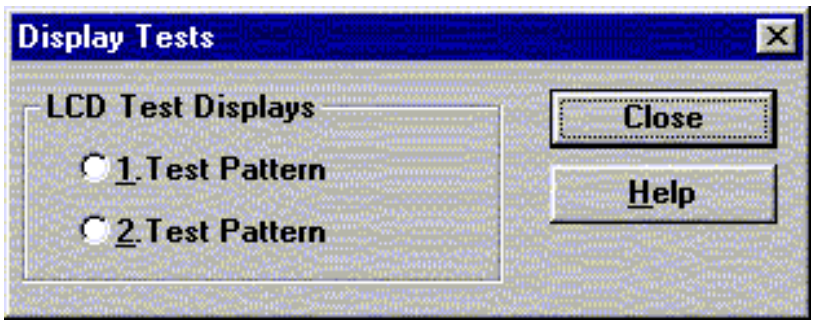
**User Interface... command**

| Activation | Status Bar Text |
|---|---|
| Alt, E,U | Open User Interface Tests dialog box |

Allows user to test all display pixels and back lights of attached phone.




Display Tests dialog includes the following items:

1. Test Pattern radio button (ALT+1):

   In test display 1 half of the indicators are displayed and the display is filled with chessboard letters.

2. Test Pattern radio button (ALT+2):

   In test display 2 rest of the (compared to test pattern 1) indicators are displayed and the display is filled with inverse chessboard letters.

When dialog is closed the phone LCD display is cleared.

Close button (ESC)

Close dialog

Help button ( Alt+H)

Context sensitive help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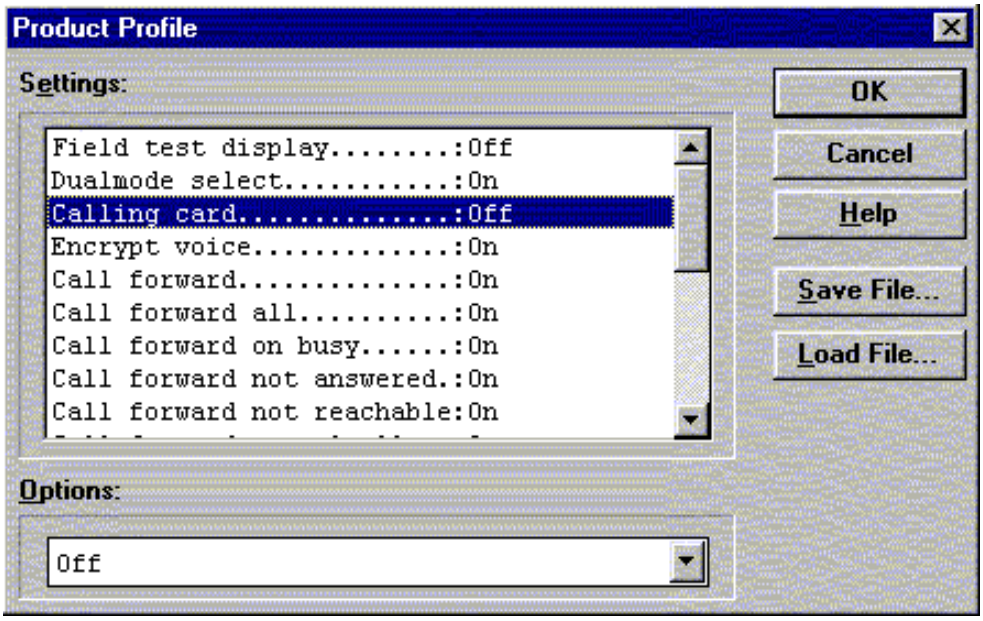
## Software

### Product Profile... command

| Activation | Status Bar Text |
|---|---|
| Alt, S,P,L,H | Open Product Profile settings dialog box. |

Function is used for making product profile settings.

When command is activated the product profile information is read from EEPROM and **Product Profile** dialog is opened.




Product Profile dialog includes the following items:

Settings list box (ALT+E):

A list where user can select desired setting.
User can toggle setting with following **Options** drop list or by double clicking desired setting in list box.

Options drop list (ALT+O):

List allows user to set options to each settings which are listed in **Settings** list box. Possible options per setting are:

Save File button (ALT+S):

Saves all product profile setting to a file. Filename will be asked from the user in a common file save dialog box.

Load File button (ALT+L):

Loads all product profile setting from a file. Filename will be asked from the user in a common file open dialog box.

OK button (ENTER)

Selections are accepted and saved to EEPROM.

Cancel button (ESC)

Selections are ignored and control is returned back to main menu.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Help button ( Alt+H)

Context sensitive help

NSW–4 Product Profile Settings

| | |
|---|---|
| Field test display.....: | On/Off |
| Dualmode select.....: | On/Off |
| Calling card.....: | On/Off |
| Encrypt voice.....: | On/Off |
| Call forward..... : | On/Off |
| Call forward all.....: | On/Off |
| Call forward on busy.....: | On/Off |
| Call forward not answered.: | On/Off |
| Call forward not reachable: | On/Off |
| Call forward cancel all...: | On/Off |
| Send own caller id.....: | On/Off |
| Call waiting.....: | On/Off |
| Read text messages.....: | On/Off |
| Write text messages.....: | On/Off |
| Emergency 9 key.....: | On/Off |
| Call VMBX key 1.....: | On/Off |
| Feature code set.....: | On/Off |
| SMS Privacy.....: | On/Off |
| SMS disp time temporary...: | On/Off |
| Keypad cover.....: | On/Off |


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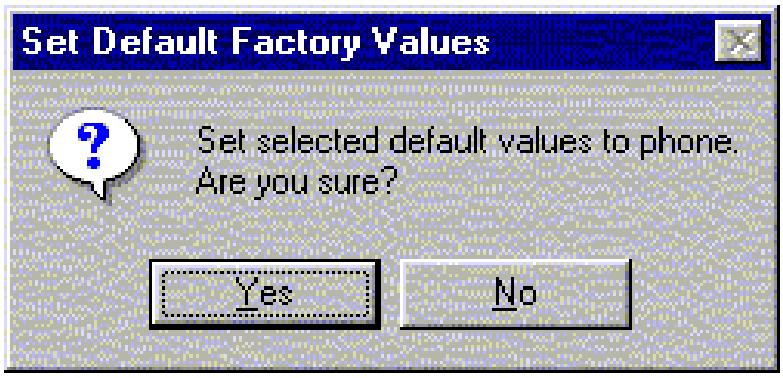
**Set Default Values... command**

| Activation | Status Bar Text |
|---|---|
| Alt, S,V | Set default values |

Command is used for resetting default values to phone's EEPROM.

After selection application asks confirmation:




If Yes is confirmed, the default settings are made to the phone:

*Warranty info*
*Phone identity*
*Production data edit*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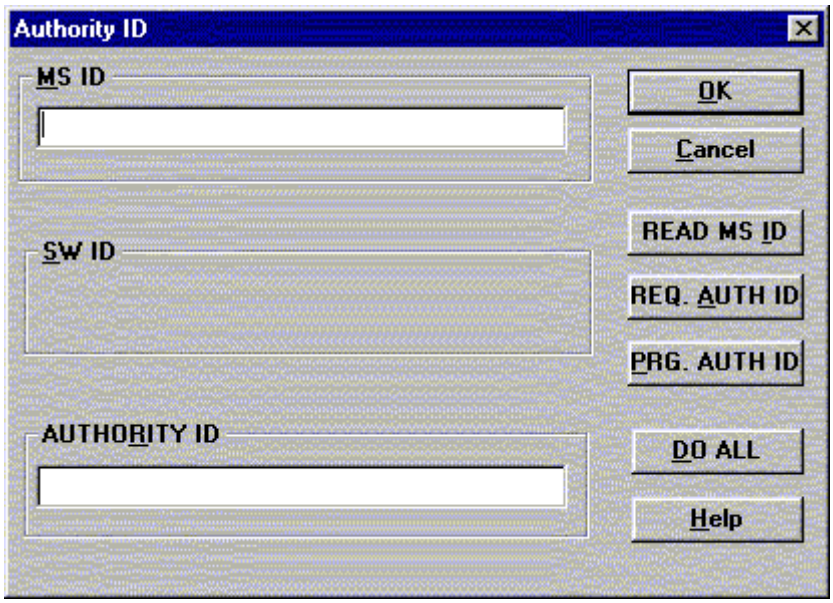
### Authority ID... command

| Activation | Status Bar Text |
|---|---|
| Alt, S,A | Open Authority ID dialog box |

This command is used for programming software authorization data remotely and locally.




The **Authority ID** dialog box includes the following items:

MS ID edit box (ALT+M)

Mobile station security id number for remote authority id programming

SW ID edit box (ALT+S)

Software id number may be needed later with with authority id
Not yet supported

AUTHORITY ID edit box (ALT+E)

Software authority id for remote authority id programming

READ MS ID button (ALT+E)

Pressing this button updates MS ID edit box from phone
Shall be used only for remote programming

REQ AUTH ID button (ALT+E)

Only for R&D use

PROG AUTH ID button (ALT+E)

Pressing this button updates value from AUTHORITY ID edit box to phone. Shall be used only for remote programming

DO ALL button (ALT+E)

Pressing this button updates authority id to phone. This button shall be used when TDF–4 (or TDD–4) is connected to PC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OK button (ENTER)

Selections are accepted and saved to EEPROM.

Cancel button (ESC)

Selections are ignored and control is returned back to main menu.

Help button ( Alt+H)

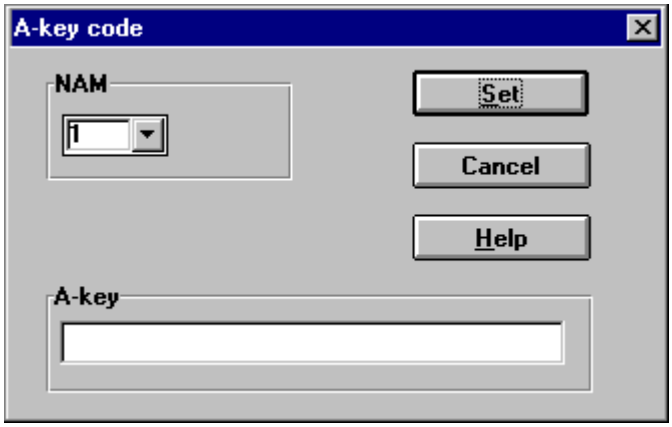
Context sensitive help

**A–key... command**

| Activation | Status Bar Text |
|---|---|
| | Opens A–key code dialog box |

This command avoids programming A–key to the phone.
Not possible to calculate A–key.

If programming is successful there is text ’code ok’ otherwise ’wrong response’.




The **A–key Code** dialog box contains the following items:

NAM list box

Number Module for programming

A–key edit field

Value of key

Set button (ALT +L)

Write value to the phone

Cancel button (ESC)

Closes the dialog box

Help button ( Alt+H)

Context sensitive help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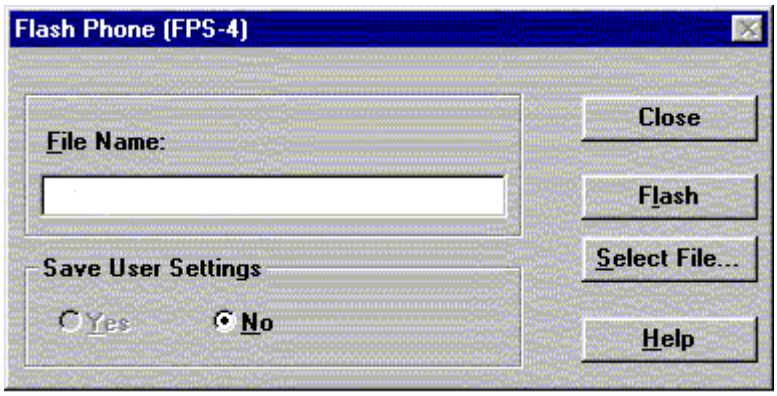
### Flash Phone... command

| Activation | Status Bar Text |
|---|---|
| Alt, S,A | Open Authority ID dialog box |

This command is used for flashing new software into the phone. While flashing the phone, user is shown approximately flashing time.




The **Flash Phone** dialog box contains the following items:

File Name... edit filed:

Diplays file path to be flashed.

Flash button (ALT+L)

Starts flashing of selected file to the phone.

Select File... button (ALT+S)

Starts flashing of selected file to the phone.

Close button (ESC)

Closes the dialog button and *does not* start flashing.

A key

Select prod.data

Send prod. data

—

Help button ( Alt+H)

Context sensitive help

During flashing status dialog is shown. After phone is flashed Authority ID is set to the phone.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## Dealer

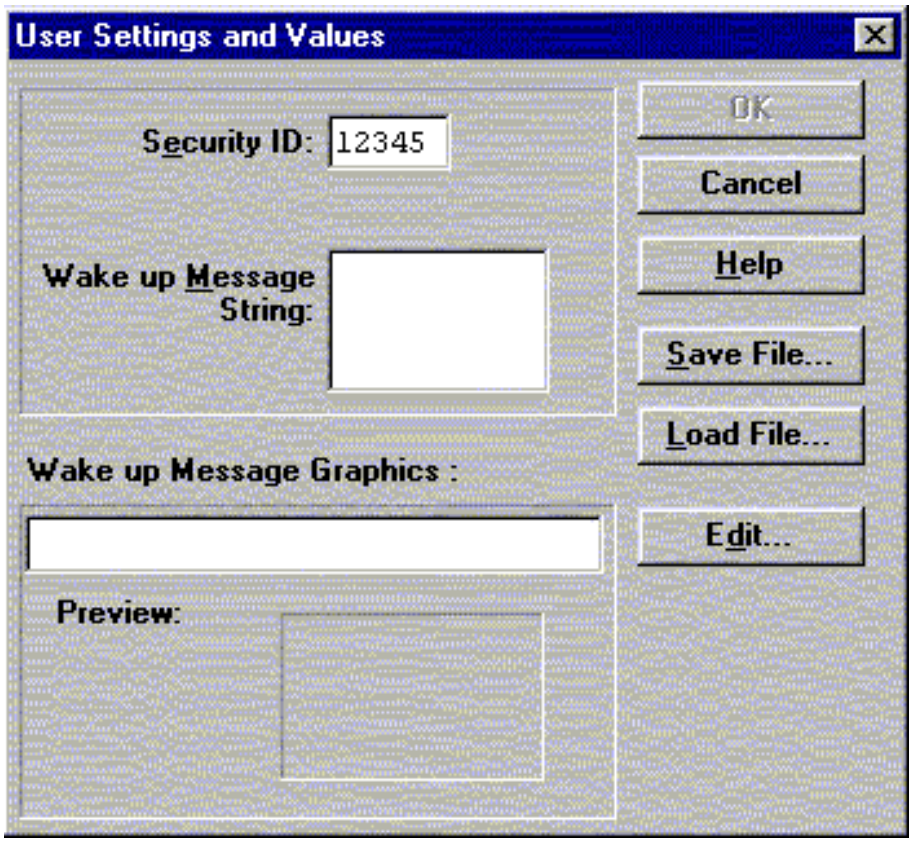
The dealer sub menu offers functions for ME settings for dealers.

### User Settings... command

| Activation | Status Bar Text |
|---|---|
| Alt, D,U | Open User Setting dialog box |

This command is used for reading, storing, and modifying the user settings and values.

After menu selection, the program opens a *query* dialog box: “Read user settings from phone?”. If you answer **Yes**, all user settings are read from the ME including menu settings. If reading fails, an error dialog box is shown. If reading is OK, the **User Settings and Values** dialog box is opened.




The **User Settings and Values** dialog box contains the following items:

Security ID edit box (ALT+E):

Edit the security code which is saved to the ME memory together with other user settings and values. Only digits are accepted for Security code. Length must be 5 digits.

Wake up Message String edit box (ALT+M):

Edit Wake up message. The message can contain up to 16 characters.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Wake up Message Graphics group

Save File... button (ALT+S):

Opens a common **File Save As** dialog box and asks for the name of the file to contain user settings and values.

Load File... button (ALT+L):

Opens a common **File Open** dialog box, and asks for the name of the file containing the user settings and values.

Edit button (ALT+D)

Starts Windows Paintbrush to edit the graphical Wake up message bitmap.

OK button (ENTER)

Selections are accepted and saved to EEPROM.

Cancel button (ESC)

Selections are ignored and control is returned back to main menu.

Help button ( Alt+H)

Context sensitive help


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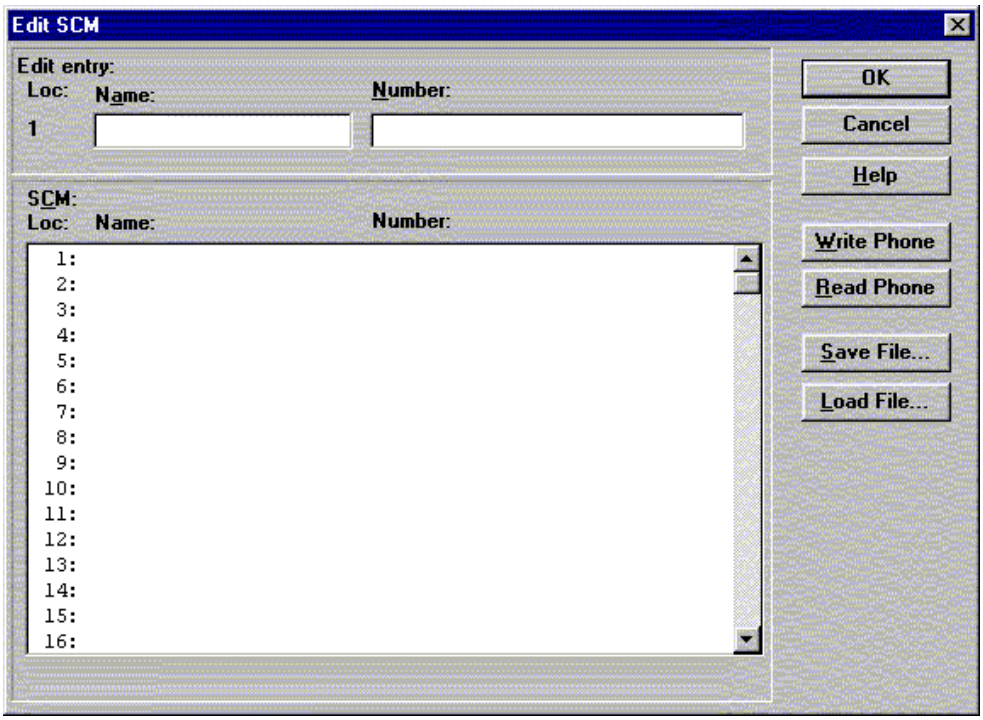
### Short Code Memory... command

| Activation | Status Bar Text |
|---|---|
| Alt, S,C | Open Edit SCM dialog box. |

This command is used for reading, storing and modifying the SCM values.




Edit SCM dialog box includes the following items:

Loc statix text:

Display current location

Name edit box (ALT+A):

Edit the Name.

Number edit box (ALT+N):

Edit the number.

SCM list box (ALT+C):

List for available names and numbers.

Write Phone... button (ALT+W):

Write SCM values to phone and checks the validity of names and numbers.

Read Phone... button (ALT+R):

Read SCM values from phone.

Save File... button (ALT+S):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Opens a default Windows File Save As dialog box and asks filename where to save SCM values.

Load File... button (ALT+L):

Opens a default Windows File Open dialog box and asks file-name where from to load SCM values. Checks the validity of names and numbers.

OK button (ENTER)

Selections are accepted and saved to EEPROM.

Cancel button (ESC)

Selections are ignored and control is returned back to main menu.

Help button ( Alt+H)

Context sensitive help

*Language*
*Edit SCM y/n*


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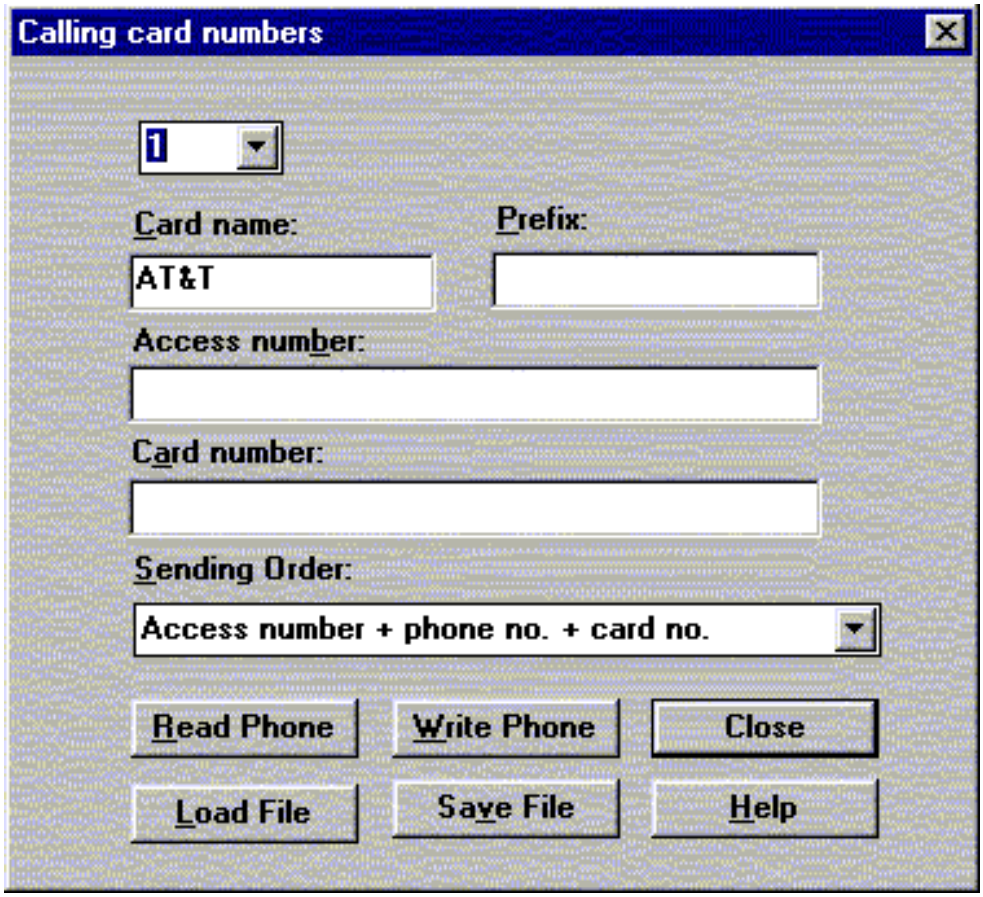
**Calling cards... command**

| Activation | Status Bar Text |
|---|---|
| | Open Calling card dialog box. |

This dialog enables to program the calling card numbers and operator telephone numbers used in credit card calls.




Calling card numbers  dialog includes the following items:

Calling Card drop list

Card can be selected up to four

Card name edit box (ALT+C)

Card name can be edited.

Prefix  edit box (ALT+P)

Card prefix can be edited.

Access number edit box (ALT+B)

Card access number can be edited

Card number edit box (ALT+A)

Card number can be edited

Sending order drop list (ALT+S)

Sending order can be selected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Read Phone... button (ALT+R):

Read calling card data from phone and update dialog items

Write Phone... button (ALT+W):

Write data to calling card data to phone

Close... button (ESC)

Closes the dialog button.

Save File... button (ALT+S)

Opens a Windows default File Save As dialog box and asks filename where to save settings.

Load File... button (ALT+L)

Opens a Windows default File Open dialog box and asks file-name where to load settings.

Help button ( Alt+H)

Context sensitive help


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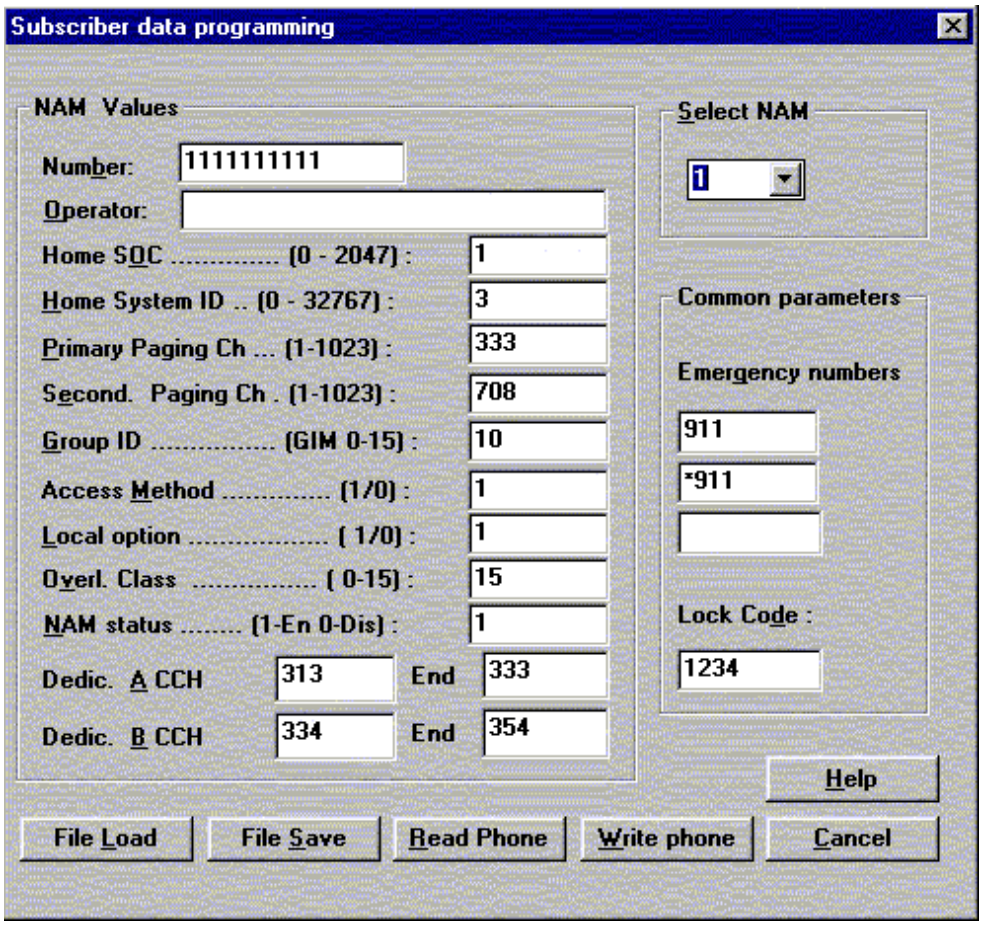
### Subscriber data programming... command

| Activation | Status Bar Text |
|---|---|
| Alt, D,S | Open Subscriber data programming dialog box. |

On the upper right corner there is a drop down box, where you can select the NAM you want to edit. The per NAM data below is updated according to the highlighted NAM. Note that emergency numbers and lock code are common to all NAMs.




**Subcriber data programming** dialog includes the following items:

Select NAM drop list (ALT+S):

The selected position is highlighted

Number edit box (ALT+B)

The alphanumeric MIN value can be edited

Operator edit box (ALT+O):

The alphanumeric value can be edited

Home SOC edit box (ALT+O:

Numeric value can be edited if not locked

Home System ID edit box (ALT+H):

Numeric value can be edited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Primary paging ch edit box (ALT+P):

Numeric value can be edited

Secondary paging ch edit box (ALT+E):

Numeric value can be edited

Group ID Mark edit box (ALT+G):

Numeric value can be edited

Access method edit box (ALT+M):

Numeric value can be edited

Local Option edit box (ALT+L):

Numeric value can be edited

Overl. Class edit box (ALT+V):

Numeric value can be edited

Nam status edit box (ALT+N):

NAM to enable or disable can be edited

Dedic. A CCH start edit box (ALT+A):

Numeric value can be edited

Dedic. B CCH start edit box (ALT+B):

Numeric value can be edited

End

Numeric value can be edited

Emergency  numbers edit boxes (ALT+G):

The alphanumeric values can be edited

Lock code edit box (ALT+D):

The alphanumeric value can be edited

File Save... button (ALT+S):

Opens a default Windows **File Save As** dialog and asks file-name where to save user settings and values.

File Load... button (ALT+L):

Opens a default Windows **File Open** dialog and asks filename where from load user settings and values.

Read Phone... button (ALT+R):

Read selected NAM’s values from phone and update dialog items

Write phone... button (ALT+W):

Write selected NAM’s values to phone

Close... button (ALT+S):  Close dialog

Cancel button (ESC):

Exit without any changes

Help button ( Alt+H)

Context sensitive help


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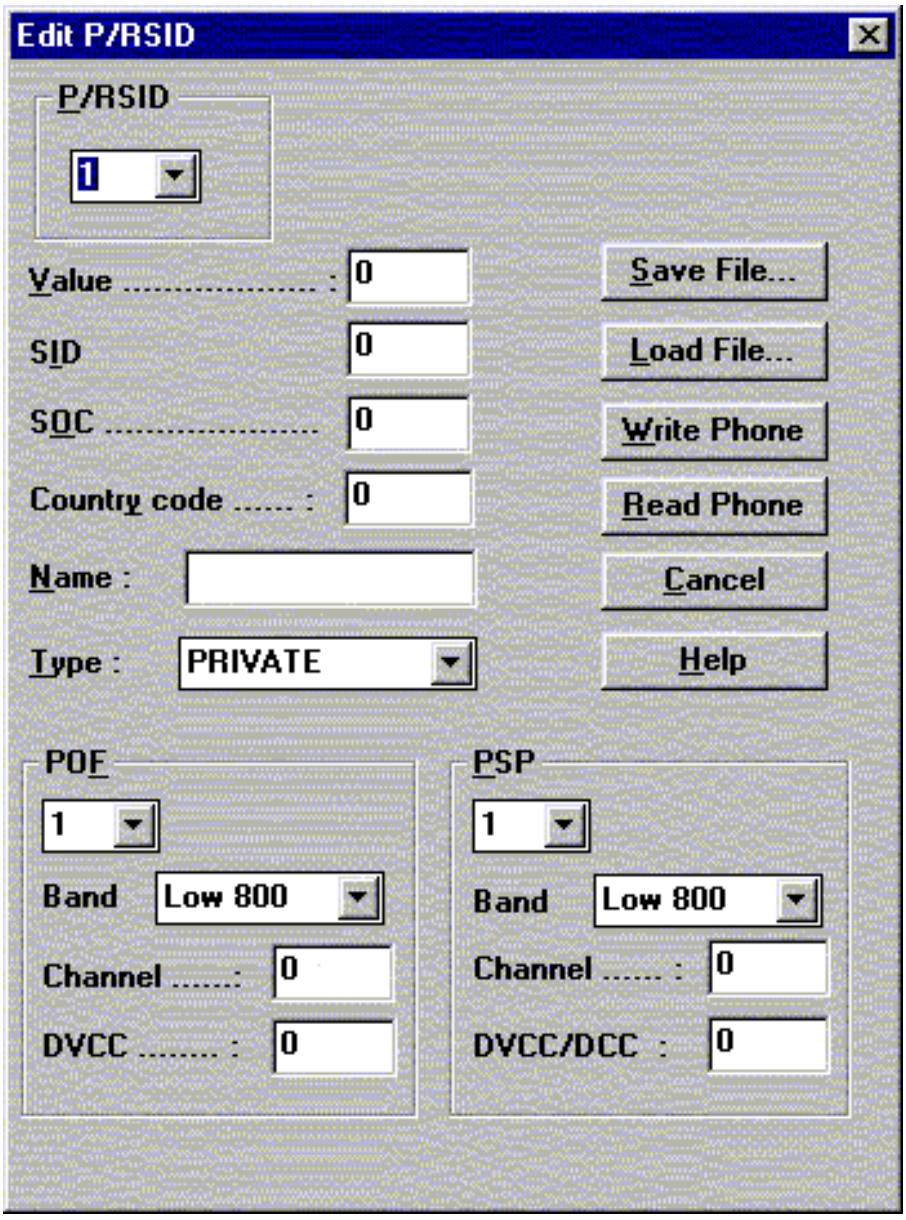
### P/RSID programming... command

| Activation | Status Bar Text |
|---|---|
| Alt, D,R | Open P/RSID programming dialog box. |

This command is used to modify the Private and Residential System IDentity values. The list contains up to 5 P/RSIDs.




P/RSID programming dialog includes the following items:

P/RSID list box (ALT+P):

Index to P/RSID list up to 5

Value edit box (ALT+V)

The numeric value of P/RSID

SID edit box (ALT+I)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The Numeric value of Home system ID stored in the mobile and uniquely associated with a MIN

SOC edit box (ALT+O)

Spesifies the System operator accociated with a P/RSID

Country code edit box (ALT+Y)

Numeric values of symbolic value which indicates if this is a Private or Residential

Name edit box (ALT+N)

The alphanumeric designator accociated with a P/RSID

Type list box (ALT+T)

Symbolic value which indicates if this is a Private or Residential

POF List box (ALT+F)

Index to private operating frequencies list up to 4

Band list box

Symbolic Value selected POF‘s band

Channel edit box

Numeric value of selected POF’s channel

DVCC edit box

Numeric value of selected POF’s module control channel

PSP List box (ALT+P)

Index to public service profiles list up to 4

Band list box

Symbolic Value selected PSP ‘s band

Channel edit box

Numeric value of selected PSP’s channel

DVCC/DCC edit box

Numeric value of selected PSP’s module control channel

Save file button

Saves file

Load file button

Loads file

Write phone button

Writes values to phone

Read phone button

Reads phone values

Cancel button (ESC):

Exit without any changes

Help button (ESC)

Context sensitive help


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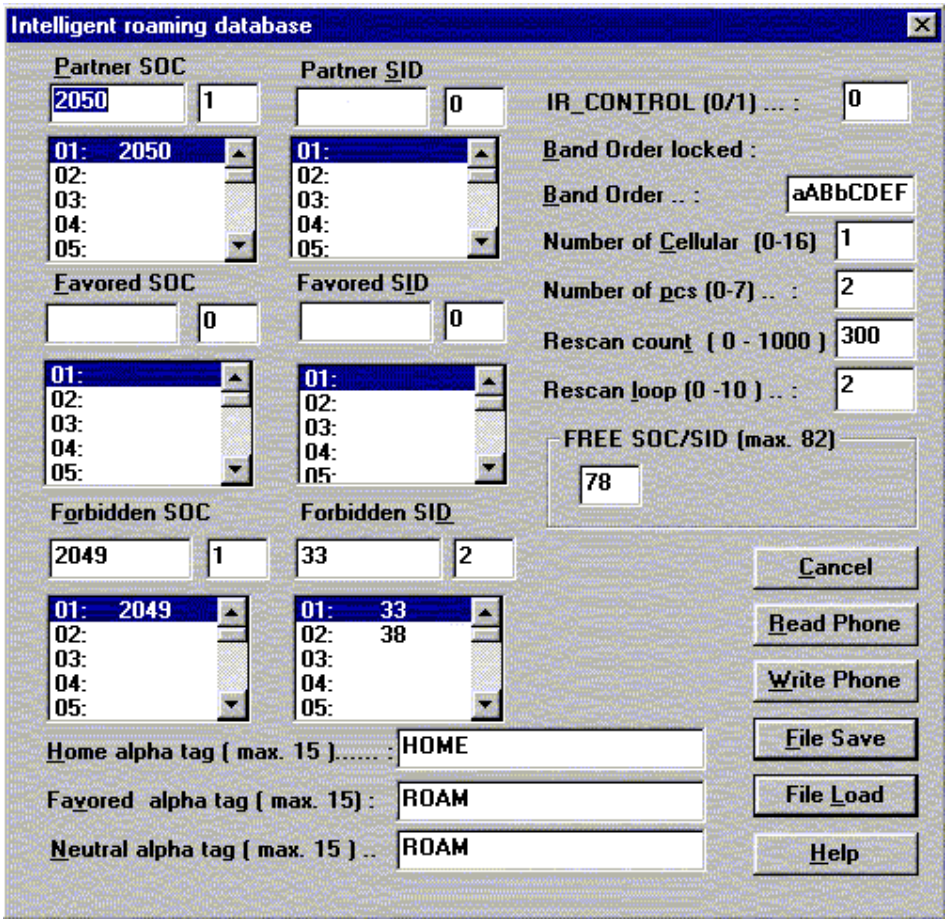
## Intelligent Roaming Database... command

| Activation | Status Bar Text |
|---|---|
| Alt, D,I | Open Intelligent Roaming Database dialog box. |

This command is used to modify database which affects directly to the mobiles behaviour when scanning for control channels.

IRDB includes max 82 lenght SOC/SID list. This is calculated automaticly from tables. If selected more than max. then error code is shown when write to phone.




Intelligent roaming database dialog includes the following items:

Partner SOC list box (ALT+P)

Number of partner SOCs in soc_sid_list. The selected position is highlighted and can be edited.

Partner SID list box (ALT+S)

Number of partner SIDs in soc_sid_list. The selected position is highlighted and can be edited.

Favored SOC list box (ALT+F)

Number of favored SOCs in soc_sid_list. The selected position is highlighted and can be edited.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Favored SID list box (ALT+I)

Number of favored SOCs in soc_sid_list. The selected position is highlighted and can be edited.

Forbidden SOC list box (ALT+O)

Number of forbidden SOCs in soc_sid_list. The selected position is highlighted and can be edited.

Forbidden SID list box (ALT+D)

Number of forbidden SIDs in soc_sid_list. The selected position is highlighted and can be edited.

IR_control edit box (ALT+T)

”1”, only the systems broadcasting. HOME SID or SOC are accepted as a service providers.
”0”, all other systems, except systems broadcasting SID or SOC set as a forbidden in a soc_sid_list, are accepted as a service providers.

Band order locked static

Band order which are not editable

Band order edit box (ALT+B)

The table tells which bands (cellular or/and PCS) and in what order the bands are searched.
a = 800 MHz
b = 800 MHz
A = 1900 MHz
B = 1900 MHz
C = 1900 MHz
D = 1900 MHz
E = 1900 MHz
F = 1900 MHz
00 = NONE

Number of cellular edit box (ALT+ C)

Number of probability blocks to scan in cellular band.

Number of pcs edit box (ALT+ P)

Number of sub blocks to scan in PCS band

Rescan count edit box (ALT+T)

Rescan time in hyperframes (HF = 1,28 seconds).

Rescan loop edit box (ALT+C)

Defines when all the band in band_order are to be scanned

FREE SID/SOC static

Number of free elements in soc_sid_list

Home alpha tag edit box (ALT+H)

Alpha tag is shown on phone’s display when on service with HOME SID or SOC. System is home system if the broadcasted SID or SOC or both of them matches with SID/SOC in a phone’s NAM.


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Favored alpha tag edit box (ALT+V)

Alpha tag which is shown on the phone display when on service with PARTNER or FAVORED system.
System is PARTNER/FAVORED system when the broadcasted SID or SOC matches with PARTNER/FAVORED SID/SOC in a phone's soc_sid_list in IRDB.

Neutral alpha tag edit box (ALT+N)

Alpha tag which is shown on phone's display when on service with NEUTRAL.
System is NEUTRAL system when the broadcasted SID and SOC does not match the values in NAM and neither in soc_sid_list in IRDB.

Read Phone button (ALT+R):

Read values from the phone

Write Phone button (ALT+W):

Write values to phone and checks the validity of names and numbers.

Save File button (ALT+S):

Opens a default Windows **File Save As** dialog and asks filename where to save values.

Load File button (ALT+L):

Opens a default Windows **File Open** dialog and asks filename where from load values. Checks the validity of names and numbers.

Cancel button (ESC)

Exit without saving any changes

Help button (ESC)

Context sensitive help


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### User Data Transfer... command

| Activation | Status Bar Text |
|---|---|
| Alt, D, D | Open User Data Transfer dialog box. |

This command is used for transfer user data from phone to the file and from file to the phone.

**User Data Transfer** dialog comprises the following items:

Load All button (ALT+L)

Load all user data from file to the phone.
NAM1 number is restored

Save All button (ALT+S)

Save all user data from the phone to the file.

Save Wakeup button (ALT+W):

Save graphical wakeup message from the phone to the file.
This file is only for FastNAM use.

Help button (ALT+H)

Context sensitive help.

Cancel button (ESC)

Exit without any changes


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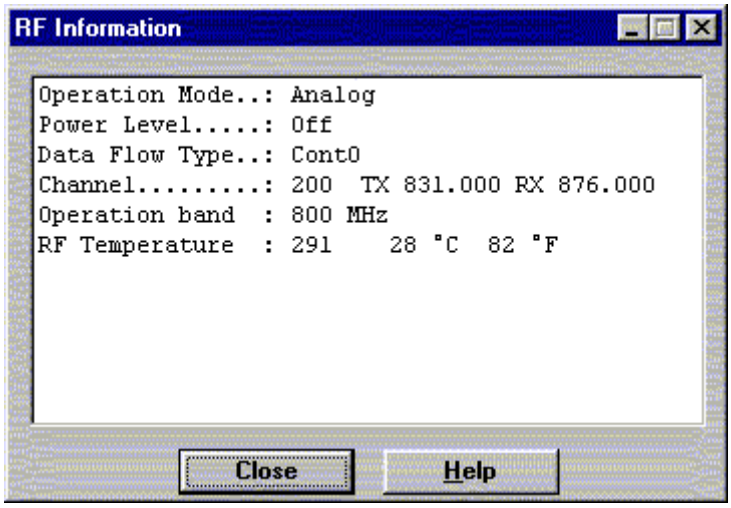
## View

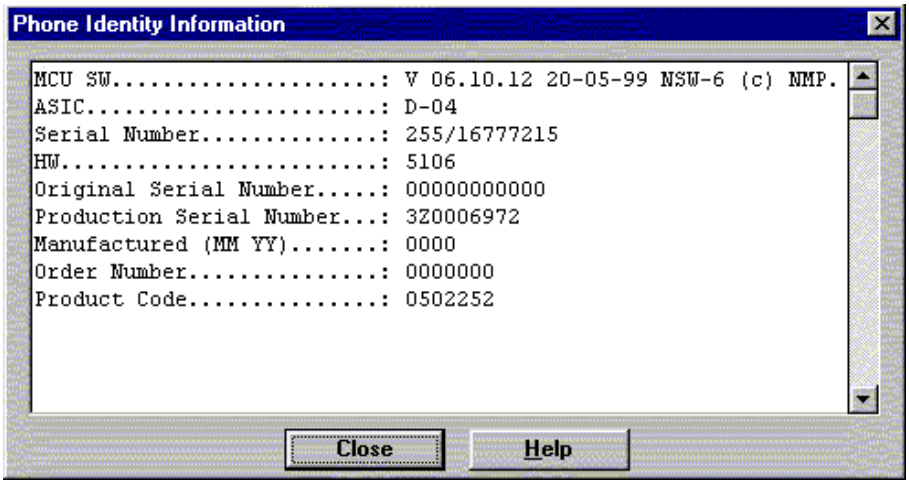
### Quick/RF Info... command

| Activation | Status Bar Text |
|---|---|
| Alt, V,Q | View Quick/RF information. |

If phone is in *normal* mode the following **Quick Info** is shown:




If the phone is in local mode the **RF Information** window is shown. Information is shown in a modeless dialog box which may be left open during other operations. It is also updated when ever needed.




Close... button (ALT+S):

Close dialog

Help button ( Alt+H)

Context sensitive help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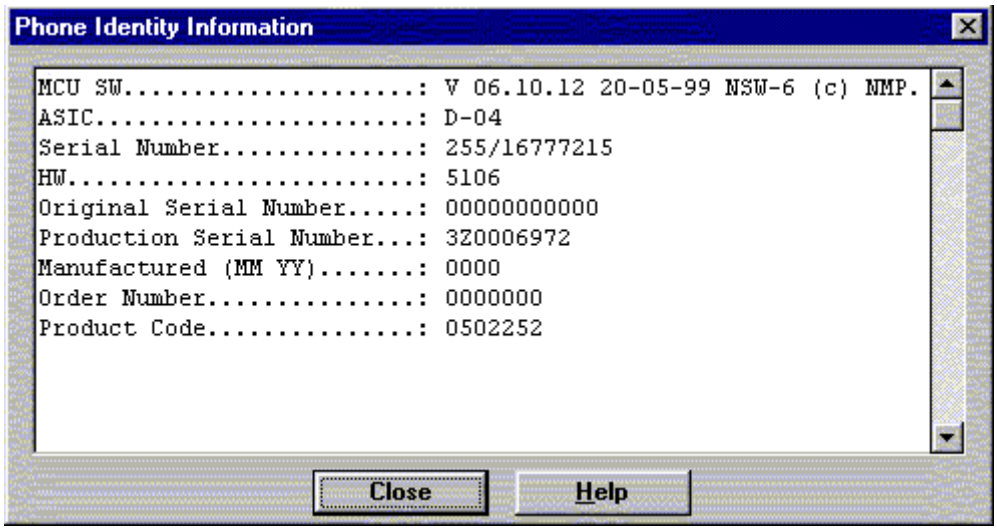
**Phone Identity... command**

| Activation | Status Bar Text |
|---|---|
| Alt, V,P | View Phone Identity. |

Command opens the **Phone Identity Information** dialog box, which shows identification information. The information is shown in a modeless dialog box which may be left open during other operations. It is also updated when ever needed.




Close... button (ALT+S):

Close dialog

Help button ( Alt+H)

Context sensitive help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# Appendix 1, Vocabulary

| Abreviation | Description |
|---|---|
| ADC | Analog to Digital Converter |
| AFC | Automatic Frequency Control |
| AGC | Automatic Gain Control |
| ASIC | Custom circuit which for instance controls communication between MCU and DSP |
| BBD–3 | Service battery |
| CLF | Common Look and Feel |
| CLI | Calling Line Identification |
| COBBA | Common Base Band Analog |
| DAC | Digital to Analogue Converter |
| DATA | DATA interface module |
| DAU–9S/P | MBUS/FBUS cable |
| DLL | Dynamic Link Library |
| DSP | Digital Signal Processor which controls radio interface and speech coding/decoding |
| EEPROM | Memory for adjustment parameters (Electrically Erasable and Programmable Read Only Memory) |
| ESN | Electrical Serial Number |
| FBUS | Fast serial bus |
| GPIB | General Purpose Instrument Bus, also know as HPIB. Specified by IEE488.2. |
| IMEI | International Mobile Equipment Identification code |
| IR | Infra Red transmitter |
| M2BUS | Serial communication bus which can be connected to accessory devices and test PC |
| MCU | Master Control Unit processor |
| MDI | MCU DSP Interface; message interface via ASIC registers |
| ME | Mobile Equipment |
| MODAL (dialog box) | A modal dialog box requires the user to complete interaction within a dialog box, and close it before continuing with any further interaction outside the window. |
| MODELESS (dialog Box) | A modeless dialog box allows the user to interact with other windows and applications. |


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| | |
|---|---|
| MS | Mobile Station |
| PC | IBM PS/AT or compatible personal computer |
| PCI | Phone Controlling Interface SW for PC |
| PKD–1/1NS/1CS | Hardware protection key (DESKEY DK2) for protecting service software from illegal copying. The software will not work without this key ! |
| RF | Radio Frequency parts |
| RSSI | Received Signal Strength Indication |
| RTC | Real Time Clock |
| SW | Software |
| TDF–4 | Flash security box |
| Tesla | Acronym, stands for **T**est and **S**ervice **L**ocals **A**pplication. |
| UI | User Interface |
| WinTesla | This Service Software program. Name copyright Nokia Mobile Phones (1996). |


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